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Problems of Economics

Selected Articles from
Soviet Economics Journals in English Translation

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Special Features of Socialist Reproduction at its Present Stage

The Development of a Unified Balance of Fuel and Power

The Development of the Forces and Relationships of Production in the Period of All-Out Upbuilding of Communism

Problems of Price Formation in Transport

The Regulations on Product Delivery: An Important Step Toward Improving Organization of Material and Technological Supply

Overtake and Surpass the USA in the Productivity of Labor

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"Statistical Methods" by F. Mills

The Bourgeois Revisionist Myth of the "Democratization of Capital"

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M. Sakov:

The Methodological Foundations of Analysis of Commodity Relationships in Socialist Society

The discussion on commodity production and the operaion of the law of value under socialism has revealed diferent points of view not only with respect to detail but in he approach to the solution of the problem as a whole and n respect to method. It would appear to be agreed that the roblem lies not in seeking some new theory of commodity roduction, but in the creative application of the theory of Marx to analysis of commodity production in socialist soiety. Although this theory was elaborated on the basis of study of capitalist commodity relations, it contains genral methodological principles for the examination of comnodity relationships in any society where such relationhips exist, including a socialist society. But how should hese principles be applied to a socialist society ? This is he essence of the debate.

In analyzing commodity relationships in a socialist econmy, the first problem to be faced is that of the principle f the historical approach, the Marxist concept of the relaionships between the historical and logical methods of inestigation of economic phenomena. As we know, Marx mployed the logical method to reveal the nature of comhodities. "However", Engels wrote, "this method is in ssence nothing but the historical method, liberated from s historical form and from the interference of accidental actors".(1) The theoretical generalizations and scientific bstractions derived on the basis of this method always reect the vividness of life, real economic phenomena, and he objective laws inherent therein.

The logical method employed by certain of our economists n examining the causes of the existence of commodity prouction under socialism frequently ignores the logic of the istorical process. Elements of subjectivism are dominant n many logical schemata. In order to construct a logical attern for the explanation of any phenomenon or process, ll that is necessary is to take some proposition as axioatic and then to develop a system of argumentation by eans of the laws of elementary logic. Certain of the verions of the logical explanation for the reasons for the exstence of commodity production under socialism have been rected on this basis. The initial proposition not requiring roof is one of the special features of the socialist economy timately related with commodity and money relationships, nd it is then proved by means of logic that it is specifical this characteristic that is the cause of commodity proction under socialism. However, in view of the fact that he socialist economy includes numerous characteristics nd special features involving commodity and money retionships to some degree, a multiplicity of logical verons of the solution of the identical problem arise. Let us ecall to mind the starting points of the most widely diseminated logical variants of the explanation of the causes commodity production under socialism:

A. Socialism means accounting; the universality of accounting requires the reduction of qualitatively different forms of labor to a single standard. Under today's conditions, only value can serve as this standard. This explains the necessity for value and consequently for the commodity form of production and exchange of products.

B. The fundamental principle of socialism is "from each according to his abilities, to each according to his work." The realization of this principle presupposes equivalent exchange of the products of labor. Therefore, we have the necessity of the commodity production and exchange.

C. The foundation of socialism is social ownership of the means of production in two forms: governmental (general public) and cooperative—collective. The existence of two sectors of production presupposes equivalent exchange between them in the commodity form. And from this there derives the existence of commodity production under socialism.

D. The fundamental basis of socialism is government (general public) property. An important feature thereof is the fact that it presupposes the economic independence of socialist enterprises, the relations among which can be realized only on the basis of equivalent repayment of costs. And from this there derives the objective need for production for purpose of exchange.

We might continue the listing of these variants of logical derivations if we took as our starting point the socialist division of labor, the principle of material incentive, the principle of cost accounting, etc. One might even find a point of departure permitting the development of a logical scheme that would demonstrate, contrary to the facts, that commodity production under socialism is impossible. For example, if we proceed from the fact that private alienation (private exchange) is an essential property of a commodity, the product of socialist reproduction cannot be termed a commodity. In brief, if we employ logic alone, we are in a position to "prove" anything we wish. However, this sort of logic has nothing in common with Marx, as the logical schemes constructed in this manner do not have the force of scientific proof. At best they may serve as working hypotheses themselves standing in need of proof. However, in order to determine which of them is closest to the truth, it is necessary to go beyond the limits of pure logic and turn to reality. The scientific method of Karl Marx requires us to pursue the logic of facts, of life, the logic of history. "The development of thought", wrote Engels, "must begin where history begins, and its further progress will consist of nothing but a reflection of the historical process in an abstract and theoretically consistent form. A reflection that is an improvement, but an improvement in accordance with its laws, and one that provides us with the true historic process, in which each factor is examined from the viewpoint of its development, and the process attains complete maturity and its classic form". (2)

It may be objected that the logical schemes presented above are not groundless, and that the point of departure for each is some feature of the socialist method of production that does exist in objective reality. However, the principle of historical development lies not only in the process of establishing a logical relationship between the specific features of the categories, commodity, and money, with specific features of the socialist method of production. It is also necessary to explain the regularities by which this specific feature changes in the transition from capitalism to socialism, and in the subsequent process of the development of the latter to full communism. The scientific logic of the explanation of commodity-and-money relationships under socialism is the logic of the real historical process of their development freed of accidental factors and the zig-zags of history.

This historical approach is foreign to abstract logic. Abstract logic inevitably brings the investigator to the peculiar theory of the "inherent necessity" of commodity-and-money relationships under socialist society. According to these view, which are upheld by a number of Soviet economists, commodity-and-money relationships are not something inherited by socialism from the preceding epoch, but are a fresh development from the socialist method of production. By this assertion they seek to emphasize that the matter under discussion is one of completely new categories not besmirched, so to speak, by a bourgeois origin. But the objective sought cannot be attained in this manner. For in point of fact if commodity-and-money categories are on the one hand inherent in capitalism and provide a satisfactory expression of its essence, and, on the other hand, are inherent in socialism and provide an equally satisfactory expression of its essence, it becomes completely impossible to understand the specific nature and the true historical contradiction between commodity-and-money relationships under socialism and under capitalism.

The effort to explain commodity-and-money relationships on the basis of the essence of socialism is in our view incorrect due to the very fact that they first made their appearance and achieved a high level of development long prior to socialism and constitute an historical predecessor and one of the preconditions thereof. The problem therefore lies in explaining the need to retain commodity-and-money relationships under socialism within given limits, the possibility of employing them against capitalism, in the interests of socialism, and the inevitability of change in their social essence because of this. This historical approach to the examination of the problem makes it possible to see that the relationship between commodity-and-money relations, on the one hand, and the essence of socialism on the other, is of an entirely different order. For the fact is that socialism, if it be examined historically as the lowest stage of a new social order, is immature communism. As socialism develops into communism and ever more fully reveals its essence, the soil for commodity-and-money relationships does not expand but narrows. They exhaust themselves economically and die off. This is the true contradiction between the historical laws of the development of commodity-and-money relationships in two different epochs. The development of capitalism provides a regular basis for an upward line of development of these relationships. The development of socialism passing over into communism defines an historically opposed line—a line of gradual outgrowing of these relationships.

The essence of socialism is directly and most completely revealed, of course, not in the commodity, not in money, but in relationships of collectivism and comradely collaboration of human beings in social production. These are truly new and hitherto unknown relationships. They cannot be contained in any commercial framework of commodity and money and cannot be reduced thereto.

The position of commodity-and-money relationships in socialist society is defined primarily by the fact that here they play not a dominant but a subordinate role. They are subordinate to the principles of socialism, serve them, and in brief are employed in the interests of socialism and thus acquire a socialist character.

For example, the relationships between town and village between agriculture and industry are, under capitalism, wholly reduced to commodity-and-money relationships in their most advanced capitalist form. In socialist society, the relationships between town and country are characterized primarily by relationships of comradely collaboration between the workers and the peasants jointly engaged in the building of communism. It is obvious that the alliance between the workers and the peasants is not an alliance pursuing purely commercial objectives. The commodity and monetary forms constitute in our society lever representing an auxiliary means of developing the econom relationships between town and country. They do not exhaust and cannot embrace the full richness of relationships of socialist collaboration of two allied classes. Neither socialism nor communism can be built on the principles of commerce alone. This must also be said of the economic relationships among socialist republics, economic districts and individual enterprises, in which commodities and money are widely employed as levers.

Distribution and exchange in a socialist society also develop in commodity and monetary forms. Working people obtain monetary income for their labor and then exchange this for the consumers' goods they need in the government-owned and cooperative merchandizing system and in part, on the collective-farm market. But even in the field of distribution and exchange, the form of commodity and money does not exhaust the content of socialist relationships. Thus, the monetary payment for labor does not express relationships of purchase and sale of labor power. Its real content is socialist distribution in accordance with labor performed. The exchange of monetary income for consumer goods is essentially purchase and sale But its socialist nature is determined not by the form of commodity or money, but again by the real economic content of purchase and sale, i.e., the fact that what is being sold is a commodity produced by a socialist enterprise and that it is purchased by the income of a member of a socialist society acquired as a result of labor.

Value itself expresses nothing socialist. It is a materialization of abstract labor constituting the social foundation for equivalent exchange of different products in accordance with the socially necessary costs of production. Is is specifically this that makes value a wholly applicable economic foundation for exchange not only within the socialist economic system, but between the socialist and capitalist systems. The social nature of value is determined not by its existence, but by the nature of the relationships of production within the framework in which it exists. The value of a commodity produced in a socialist economy reflects socialist relationships. However, the value of the same commodity exported and entering into circulation on the capitalist market can reflect only capitalist relationships. Contrariwise, commodities imported from bourgeois countries and entering the soviet market lose their capitalist nature. Their value here reflects socialist relationships.

Value also undergoes certain metamorphoses within the framework of socialist society itself. Value is the foundation for equivalent exchange among socialist enterprises, between town and country, and among the economic districts of the country. It is the foundation on which the socialist principle of distribution in accordance with labor is realized. Value expresses socialist relationships in all the foregoing instances. However, when this same value is employed for purposes of speculation, for personal enrichment, etc., it loses its socialist character. There is, of course, no grain of socialism in speculative purchase and sale, although if we may resort to imagery, the form of value is completely indifferent to this and is quite satisfactory to speculative individuals. These metamorphoses of value are simply inexplicable from the point of view of the "theory of inherent nature" of commodity relationships under socialism.

The historical approach to examination of the categories of commodity production in socialist society is rejected by the advocates of the "theory of inherent existence" on the basis that, if this were the case, these categories would then be carry-overs from capitalism and a foreign body within the socialist economy. In order not to cast such a "shadow" over commodity-and-money relationships in socialist society, they are simply torn out of their real historical context and "derived" by the method of logic directly from the essence of socialism as newly-developed relationships. However, we know that the process of the appearance and development of commodity-and-money relationships embraces many thousands of years. To think that they can arise from scratch and come into being within two or three years after the proletarian revolution without any relation to their real historical developments, and without struggle against capitalism, means to close the door upon a scientific understanding of these relationships. Socialist society was successful in developing, within a comparatively brief period, an efficient system of commodity-and-money relationships adapted to our planned economy precisely because this system did not have to be thought up or invented. It had long existed; it had been readied by history. The problem consisted of winning this system away from capitalism, of fundamentally changing its social nature, of adapting it to the interests of socialism. This problem was solved in the period of transition of capitalism to socialism.

The Marxist historical method of investigation makes possible a scientific explanation not only of the historical relationship among phenomena but of their qualitative changes in the process of development. Basing ourselves upon this method, we must explain the specific features of the socialist method of production conditioned by the need to employ and, consequently, to change the very nature of commodity-and-money relationships in the socialist economy.

The change in the nature of commodities and of money under socialism is not a mysterious transformation hidden from the eyes of the researcher. It is the result of an embittered struggle between socialism and capitalism during the transition period on the principle of "who will win over whom," the struggle for mastery of the levers which commodity and money represent, levers that had been in the hands of the bourgeoisie and which were torn from its hands by the socialist state that adapted them to its interests.

The historical point of departure, which cannot be left out of consideration, is the fact that after the winning of power by the proletariat, commodity and monetary relationships are retained and are employed primarily to establish economic ties between town and country, to strengthen the alliance between the working class which represents socialized industry and the peasantry with its small-scale and fractionalized economy. It was specifically this with which V. I. Lenin associated the need to employ commodity-and-money relationships under the conditions of a transitional economy and which found reflection in decisions of the party. Thus, in the resolution of the Tenth All-Russian Party Conference "On Economic Policy," we read: "Commodity exchange is recognized to be the fundamental lever of the new economic policy. Proper relationships between the proletariat and the peasants, the development of a completely stable form of economic alliance between these two classes during the period of transition from capitalism to socialism is impossible without the establishment of systematic commodity exchange or exchange of products between industry and agriculture."

The Communist Party, directing the efforts of the workers and peasants to solution of the problems of the upbuilding of socialism, found itself facing the necessity of employing the levers of commodity and money in the interests of socialism. Lenin advanced the objective of "learning to trade" so as to triumph over capitalism in the field of economics with its own weapon. This is the real historical origin of value categories — this was no peaceful evolutionary process, but an embittered class struggle in the course of which it was necessary to "master commerce, give it direction, and contain it within definite limits..." (3) This is the real process of the development of the categories of commodity and money, qualitative change therein, and their ultimate transformation into categories of socialist society new in essence.

In turn, the development of economic ties between town and country, between industry and agriculture as commodity-and-money relationships gave rise to the need to extend these forms to the economic relationships within the socialist sector itself. This was expressed primarily in the organization of government and cooperative commerce in consumer goods to replace the system of distribution in kind and by rationing during the period of war communism. It was expressed in conversion to payment for labor in money, and also in placing government enterprises on a cost accounting basis. In the resolution of the Eleventh Party Congress, "The role and objectives of trade unions under the conditions of the new economic policy" we read: "The conversion of government enterprises to what is termed cost accounting is inevitably and indissolubly related to the new economic policy, and in the immediate future this will inevitably become the dominant if not the only form of operation. In reality this means, within a framework of legal and more and more free trade, the conversion of government enterprises to a commercial foundation to a considerable degree".

Thus, historically, the problem of commodity and monetary relationships made its appearance in the process of the upbuilding of socialism primarily as a problem of the alliance between town and country. This was a most important form for the reinforcement and development of a class alliance, of the collaboration between the workers and the peasants in their common struggle for socialism. Fundamentally, this problem remains during the socialist stage. Of course, the conditions have changed: socialist economic forms dominate undisputed both in city and country. But the main factor in commodity and monetary relationships remains, as before, the economic ties between town and country, the foundation of which is the economic collaboration between the working class and the collective farm peasantry. The role of this sphere of commodity relationships in the period of all-out upbuilding of communism is not only not diminishing but is, on the contrary, growing. This is testified by the reorganization of the machine and tractor stations and the initiation of sale of machine equipment to the collective farms carried out by the Communist Party and the Soviet government in 1958.

Those economists who deem the major factor in the problem of commodity-and-money relationships to be not the economic ties between town and country but the interrelations among government enterprises are, in our opinion, quite far from the truth. This shifting of the center of the problem is dictated by the logical scheme adopted by certain economists in which the need for commodity and money relationships under socialism is explained directly by the special features of government property (or, to be more precise, by the fact that the relationships between government enterprises are on a cost-accounting basis). Looked at from this viewpoint, the existence of commodity-and-money relationships under socialism is converted from a problem of relationships among classes into one of the forms and methods of running government enterprises. Of course, this is also a very important matter, but it does not represent the fundamental social and economic essence of commodity and monetary relationships at the present stage of history.

In the future, when, in the process of the upbuilding of communism, society will overcome the significant differences that exist between town and country, and class differences between workers and peasants will disappear, a new stage in the development of commodity-and-money relationships will develop. They will lose the social and economic content that they now possess. This will be the decisive step in the direction of their disappearance. That is when the essence of commodity and money relationships, to whatever degree they will then still be retained, will be reduced to forms and methods of running the economy within the framework of unified general public property. And when the transition to complete communism is completed, they will finally be completely outlived in this form as well.

It follows from all the foregoing that the new nature of commodity and money relationships under the conditions of undivided dominance of socialist forms of the economy may be correctly understood only in the light of those fundamental changes which they underwent in the period of transition from capitalism to socialism. This means that it is impossible to regard commodity-and-money relationships under socialism and in the transition period as two separate problems to be examined individually. They are related by the unity of the historical process and it is in this logical relationship that they have to be studied.

However, the foregoing does not exhaust the problem of commodity and monetary relationships under the conditions of socialism. We have to explain why the increasing employment of value categories under socialism signifies a declining line of development that will terminate when they die away under full communism. A scientific answer to this question can be given only on the basis of a correct application to analysis of the socialist economy of Marx's fundamental proposition to the effect that the commodity form of the product is conditioned by the specific historical nature of social labor and the qualitative changes they undergo in the process of the gradual transition from socialism to communism.

The commodity form of the product is merely another expression of the historically determinate specific social nature of labor. Therefore, Marx ultimately reduces analysis of the commodity to the analysis of labor it represents. The major point in this analysis is revelation of the dual contradictory nature of the labor that produces commodity. The establishment of this fact is one of the greatest scientific discoveries made by Karl Marx. In a letter to Engels (January 8, 1868) he wrote, "... every economist without exception missed the simple fact that if a commodity is dual in nature, to wit, a use value and an exchange value, the labor embodied in the commodity must be of dual natu whereas a simple analysis of labor sans phrase (without further explanation) such as that made by Smith, Ricardo, etc., will continually encounter things inexplicable. This the essence of the entire secret of a critical concept of th problem". (4)

Analysis of the social conditions of production giving ri to the dual nature of labor answers the question of why th product of labor acquires the form of a commodity under given circumstances. In this connection, the efforts of ce tain economists, and particularly of Ya. Kronrod, to expla commodity and monetary relationships in a socialist soci on the basis of the contradictory nature of social labor, is deserving of attention. However, they examine this contra diction in purely logical form.

Ya. Kronrod advances the following scheme: general public property — directly social labor — non-antagonisti contradiction therein (between the totality of the labor expended upon production of the social product as a whole, and the individual and collective labor expended upon the production of the products of the individual social enterprises), — commodity form of product. (5) This scheme i subject to criticism because it does not reflect the real logic of the development of commodity and money. It presents a congealed logical formula for the connection of these categories under socialism. But the cause (general public property — directly social labor) and the consequen (non-antagonistic contradictions — commodity form of pro uct), are taken outside their development and are not logically connected.

The founders of Marxism related the superseding of the commodity form of production with complete socializatio of production (and general public property is the form closest to this goal under socialism). In the scheme examined above, general public property is regarded as the point of departure and the reason for the existence of com modity production under socialism. According to Marx, d rectly social labor is termed that because it is freed of in ternal contradiction and is capable of being measured and compared not indirectly but directly in terms of working time. In contradiction to this idea, we see an effort to pro that direct social labor is posessed of an internal contradiction of its very nature, and therefore requires an indir material form of expression and measurement. Accordin Marx, direct social production, like direct distribution, eliminates all commodity exchange whatever, and consequently the transformation of products into commodities. Ya. Kronrod advances the opposite thesis: "... the develo ment of the socialist economy has created a situation whic the classical writers of Marxism could not have foreseen despite the fact that production has become public and socialized and labor has become direct labor for society, commodity production and exchange have been retained."(In a word, this logic tells us that commodity production exists in socialist society contrary to the scientific predictions of the founders of Marxism with respect to the co ditions under which commodity and money relationships w be overcome. However, in reality, this is not at all the ca

In the first place, the facts are not put forth with prope precision: socialized production and direct social labor ar depicted as a final result, and not as a process of development which will come to completion only during the highe phase of communism. If these facts be examined historically, in their development, it is not difficult to convince ourselves that the practice of socialism does not deny but onfirms the correctness of the scientific conclusions made y Marx and Engels with respect to the historical perspecive of the commodity form of production.

In the presence of dominance of private property in the neans of production, no matter how highly the social diviion of labor and the social aspects of production may be leveloped, the labor of the producers remains private and ocially mysterious. Under these conditions, the social ature of labor and its social relationships are revealed nd realized only after the process of production is comlete and in the course of the social movement of the finshed products, in market exchange, and it is as a result of his that these products acquire the specific form of comnodities. Commodity and commodity circulation represent he only possible form of manifestation of the social character of the labor of the individual producers.

Socialist production is, by its nature, directly social in ontradiction to capitalist, private (socially hidden) producion. However, in order to explain why, despite the fundanental change in the nature of production, its commodity orm is retained, we do not at all have to reject the concepts f Marx pertaining to this problem. On the contrary, only consistent application of these concepts permits a correct nd scientific answer to be found.

According to the theory of Marx, the full development of he direct social character of production will eliminate ommodity and money relationships. Consequently, accordng to this theory, maintenance of commodity and money elationships under the conditions of socialism may be exlained only by the fact that the social nature of production s not entirely mature at the present stage of development.

We know that the description of direct social labor proounded by the founders of Marxism contains two fundamenal points. The first is that direct social labor is labor oranized in planned fashion by producers freely associated n a scale embracing society as a whole and on the foundaion of common ownership of the means of production. Secndly, it is labor that is socially equal in all its concrete anifestations, and this requires complete overcoming of e residues of the old division of labor. Under these conitions, individual labor outlays may be reduced to the verage socially necessary outlays and directly compared units of working time.

The triumph of socialism signifies a fundamental change the nature of labor. From an object of capitalistic exloitation it is converted into free work for oneself, for ne's society. From a private affair it becomes the first ocial obligation, a matter of honor and glory. The domiance of the anarchy of the market over the producers is eplaced by a planned organization of their labor in accordnce with the principle: "from each according to his abilies, to each according to his needs." All this means that ith the transition to socialism, labor completely loses its rivate capitalist nature and becomes organized and planned bor for the good of society. But this marks only the beinning of its development as direct social labor. Its inomplete development during the socialist stage is condioned primarily by the fact that socialization of the means f production is incomplete. This finds expression in the xistence of two forms of socialist property and, according-, two sectors of social production — the government and e cooperative-and-collective farm, differing as to the vel of socialization of production.

Under the given conditions, the planned inclusion of dustrial and agricultural labor into a single process of ocial production is mediated by the relationships between e two forms of socialist property. In the comradely laboration of two friendly classes — the workers and peasants — this mediation creates, during the socialist stage, the need to employ the commodity-and-money relationships in the production alliance between town and country.

The incomplete maturity of direct social labor under socialism is also expressed in the continued existence of social inequality of the concrete types of labor, in substantial differences between mental and physical labor, industrial and agricultural, skilled and unskilled, heavy and light. These differences are the reasons for the fact that the specific useful forms of labor comprising components of the process of planned production have not as yet become completely equal. They find their ultimate social recognition in terms of the results they produce. In other words, the labor of the individual is evaluated (paid for) by society in its abstract form, as labor that creates a value. The individual outlays of qualitatively different specific forms of labor are, for the same reason, not direct social values comparable in working time. They manifest themselves as social values indirectly through the balancing of products of labor in the process of exchange, these products acquiring the form of commodities.

Thus, with the elimination of private ownership of the means of production, the antagonistic contradiction between private and social labor has disappeared, but the non-antagonistic contradiction among various types of labor remains. However, this contradiction is produced not by the directly social nature of labor, as Ya. Kronrod asserts, but by its immaturity, by the fact that the historically-conditioned social nonuniformity of labor has not yet been overcome. This heterogeneity, which is a product of a history many centuries in length, cannot be overcome directly after the abolition of private property. Fundamental qualitative changes are necessary in socialistically socialized labor along with the complete development of its direct social character. This will require an entire epoch — the epoch of gradual transition from socialism to communism.

The direct social nature of labor will attain its complete development when socialization of the means of production is completed and a single communist property therein has been established; when the social heterogeneity of labor has disappeared and its concrete forms become socially equal. Only under these conditions will the non-antagonistic contradiction between individual and social labor finally disappear, and will working time become the sole social measure of the outlays of labor in all its specific forms.

In our opinion it is in these changes in the nature of labor that we must needs seek the specific nature of the law of development of commodity and money relationships under socialism, which is entirely different from the laws of their development under capitalism. In the latter case it may be depicted as a rising line — a line of ever fuller flowering of commodity and money relationships, in which the essence of capitalism is revealed. Under socialism, the law of development of these relationships is entirely different. It is determined not by the essence of socialism, but by the concrete historical conditions of its appearance and development. Therefore, the law here is that the complete revelation of the essence of socialism, that is, its progress to communism, will lead not to flourishing, but to the final uprooting of the economic possibility for the existence of money and commodity relationships, and to the gradual overcoming thereof. These relationships will cease to exist when the direct social nature of labor has achieved complete maturity.

One of the major arguments advanced against this concept of the problem is that it allegedly serves as a theoretical basis for underestimating the levers of commodities and money under socialism. This is completely untrue. During the period of transition from socialism to communism the government will also die away. However, this provides no basis whatever for underestimating its function in the upbuilding of communism. The same holds for the existence of commodity and money relationships. They are and for a long time to come will continue to be a powerful lever for the development of socialist production. Socialist society, moving along the path to communism, reinforces the employment of commodity-and-money relationships, not to render them eternal but more rapidly to create the social and economic prerequisites essential for them to be outlived completely. This is the historical perspective for commodity-and-money relationships after the elimination of capitalism, on the basis of which they attained a high level of development. This is the logical perspective for commodity relationships first theoretically clarified by Marx and Enge and now being confirmed in practice by the entire cour the upbuilding of communism in our country.

FOOTNOTES

(1) Karl Marx and Friedrich Engels, Collected Works, Vol. 13, p. 479. Russian Edition.
(2) Karl Marx and Friedrich Engels, Collected Works, Vol. 13, p. 497. Russian Edition.
(3) V. I. Lenin, Collected Works, Vol. 33, p. 90.
(4) Karl Marx and Friedrich Engels, Selected Letters, Government Printing Office for Political Literature 1953, pp. 197-198 (Russian Edition).
(5) See Problems of Economics, Number 10, 1958.
(6) Problems of Economics, Number 10, 1958, p. 104.

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Ya. Kronrod:

Special Features of Socialist Reproduction at its Present Stage *

Socialist expanded reproduction has certain qualitative special features of significance during the period of all-out upbuilding of communism. These features are determined by internal and external conditions of the economic development of the USSR in this new stage. These features are characteristic both of the development of the productive forces, which is the process of all-out upbuilding of the foundations for communism in material technology, and of the expanded reproduction of the relationships of production, which is presently a dialectical process of reinforcing socialist relationships of production and of gradual transition thereof into communist relationships.

What then are the fundamental features and characteristics of expanded socialist reproduction in its present stage?

The first and most important such characteristic is determined by the fact that the Soviet Union today possesses so powerful a potential for the production of material wealth that all the possibilities have been created and the objective necessity has arisen for an all-sided harmonious expanded reproduction progressing along the entire front of the economy, with all its elements and segments mutually interrelated, proceeding at high rates, on the basis of priority growth of heavy industry. Our country, which was compelled to develop a modern heavy industry in a very brief period, traversed, in less than 15 years, the course which the industrially-advanced capitalist countries required approximately a century to cover. Naturally, this required a corresponding concentration of resources of goods and labor and was one of the significant reasons for the reduction of the rate of reproduction of branches in department II of industry, and of the nonindustrial branches of material production, including agriculture, as well as of the limited development of the non-productive sphere. During the period of postwar restoration of the national economy of the USSR, a forced growth in industry was also achieved, to some degree, thanks to slower rates of development in other branches of the economy. This was the key to the creation, in the very briefest period of time, of conditions for the all-round economic upsurge of the future. Today, the job of creating the material conditions for an all-round rapid upswing in the economy and all-round high rates of expanded reproduction has been successfully carried out.

To begin with, there has been a sharp change in the relationship between the rates of development of industry and agriculture, and the rate of growth of agricultural production has been substantially accelerated. Major possibilities have been created for increasing the rates of expanded reproduction in other branches of the production of goods (transportation, communications, urban service industries, the productive functions of commerce, etc.). Also of the greatest importance are the expanded possibilities for assignment of resources of goods and labor to the development of the non-productive sphere, primarily housing, the social-and-cultural sphere, etc. This means that the country today has such a potential for material production as to enable it to combine an upsurge in the productive sphere, and a growth and increase in the efficiency of the operating productive forces of the country, with the development of the conditions necessary for a rapid and undeviating improvement in the material well-being of the people.

Thus, the harmoniously coordinated processes of rapid development of all the branches of material production, and accelerated development, on the basis thereof, of the non-productive sphere, is the first and most significant characteristic of the process of expanded socialist reproduction in the period of all-out upbuilding of communism in the USSR.

A second characteristic along these lines is the new nature of the intensity of socialist reproduction at its present stage. Under socialism, reproduction always proceeds as an intensive process, that is, it is effected on the basis of continuous technical progress. This is an inseparable property of economic development under socialism. However, the process of expanded reproduction during the period of expanded upbuilding of communism is characterized by the fact that it is carried out on the basis of a rising technological revolution that embraces an ever broader group of branches of the economy. This technological revolution embraces the entire totality of material components of the forces of production. Step by step, the tools of labor are being revolutionized by electronically controlled equipment. The possibilities of converting them, in an ever greater number of branches of industry, into jointly functioning automatic systems of machines become ever greater. The foundation for production in energy is on the eve of the most profound revolution in connection with the introduction of universal electrification, which will increasingly be founded on new and powerful sources of energy: the controlled processes of nuclear fission and fusion. New synthetic materials are flowing into industry in a mighty stream. The technology of production is being revolutionized as the result of extensive introduction of new materials, the employment of electricity in technology, the incorporation of chemistry into production processes, the application of fundamentally new methods of controlling technological processes on the basis of electronics, etc. The technological revolution is being based upon an ever greater utilization of science as an independent potential in material production, to employ the expression of Karl Marx.

Thus, one of the most important distinguishing characteristics of expanded reproduction in the period of all-out upbuilding of communism lies in the fact that it is proceeding on the basis of a technical revolution that has gotten under way and rapidly rising, and one that is, in the final analysis, to effect a fundamental change in the entire totality of the productive forces of society, and to convert them into productive forces equal to a developed communist social order.

Intimately related with these characteristics of the process of reproduction, which are typical of the present stage

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To pose the question.

of economic development in our country, is the characteristic expressed in a sharp change in the most important proportions in the economy: in the field of material goods, values, regions, etc. Every process of expanded reproduction proceeding on the basis of technical progress is inevitably accompanied by changes in ratios within the economy. Therefore, changes in proportions themselves do not in any way represent a specific feature of the present period of the development of the economy of the USSR. The point is that the entry of our country into the period of all-out upbuilding of communism requires a significant strengthening of this process and, in many cases, the outright smashing of the proportional relationships that have come into being. This is called for by the need to create a structure of production that will meet the needs of the transition to communism and by the need to gain maximum time. Today, when the possibilities for an all-round harmonious development of all branches of the national economy on the basis of an all-out technological revolution have been created, the conditions for the establishment of optimum proportions are undergoing a significant change.

The unswerving upsurge of the living standard of the people with the growth in production is a law of socialist expanded reproduction. However, in this field, the present stage in the economic development of the USSR is characterized by significant special features: an unprecedently rapid rise in the entire totality of elements determining the people's living standards. The increase in the totality of effective consumer demand is proceeding both by expanding the forms of individual consumption and by accelerating the growth of social consumption funds. The uplift in the national economy is being combined with fundamental changes in the conditions of labor in city and village on the basis of technological progress and an increase in the productivity of social labor. When conversion to the seven-hour workday has been completed, a further reduction in hours will follow in the years immediately ahead, and the USSR will become the country with the shortest working day and the shortest working week. At the same time, the conditions for expanded reproduction of labor power will change. The training of personnel with higher, medium and mass skills is being raised to a new level.

Thus, the mighty rise in the well-being of the people, the harmonious increase in all the elements determining it, the rapid development of public forms of consumption, the all-round change in the conditions of reproduction of labor power represent one of the most important characteristics of expanded reproduction in the period of all-out upbuilding of communism.

The fundamental qualitative changes in the development of the productive forces at the present stage, the enormous growth in the material resources of socialist society condition profound changes in the condition of production relationships which accelerate the process of transformation of economic relationships corresponding to the first phase of communism to relationships properly representative of its second phase. Qualitative changes are occurring in the government and collective-and-cooperative forms of property which are coming increasingly to resemble each other. The situation with respect to social production of various groups of working people is changing. The differences between them are changing, as are forms of exchange and distribution, etc. All these shifts in the system of socialist production relationships and their gradual transformation into relationships inherent in the higher phase of communism constitute one of the decisive features of the process of expanded reproduction at the present stage of economic development of the USSR.

A characterization of the most important specific feature of the process of reproduction at the present stage cannot limit itself to an analysis merely of the internal conditions of development of the Soviet Union. A most important factor determining the specific nature of the process of reproduction in our country is the change in external circumstances: the development and strengthening of the world sy tem of socialism, the irrevocable triumph of socialism in the USSR, and the fundamentally new conditions, intimately related therewith, in the economic competition between the two systems.

The development of a world system of socialist economic founded on the international socialist division of labor mea that the process of reproduction in the USSR is, to an ever-increasing degree, being coordinated, in planned and all-round fashion, with the process of reproduction in the other socialist countries. This will, to a vast degree, increase the potential of the reproductive process, increase the economic flexibility of the respective countries and their technological equipment, expand the limits of accumulation and the possibilities for growth in popular consumption, etc The final triumph of socialism in our country means that th burden of defense expenditures, which was exceedingly heav in the period in which socialism was built by a single country and the Soviet Union developed in capitalist encircleme has today been substantially eased. It is understood that, under present-day conditions as well, the Soviet governmen is compelled to expend substantial material resources upon strengthening the defense capacity of the country. However the drawing off of these resources today has a smaller effect than ever before on the scale of the productive force of the country.

The conditions of the economic competition with the coun tries of capitalism have changed and it would appear that th has affected the conditions of reproduction in the USSR in another respect. Whereas, previously, the Soviet Union su passed the lands of capitalism in rate of expanded reproduc tion, that is, in rate of increase in social product, of nation income, of public wealth, etc., nevertheless it substantially lagged behind the absolute scale of their increase. In recent years this situation has undergone a serious change. The Soviet Union has not only overtaken and surpassed the most advanced countries of capitalism, including the Unitec States, in absolute increase in the most important forms of production (coal, steel, petroleum, the production of a number of branches of the chemical industry, machinery manufacture, etc.), but also in the absolute growth of the social product as a whole. Today, the social product of the USSR is approximately 50% of the social product of the USA The average annual rate of increase in the social product o the USA is about 1.5%-2%. The average annual increase in the social product of the USSR is 8%-10%. From this it follo that the absolute average annual increase in the social proc uct of the USSR is today at least 100%-150%, and in a number of fields more than 200% greater than the absolute increase in the social product of the USA. The increases in the social product of the USSR substantially exceed, from year to year, the total increases in social product of England, France, and the German Federal Republic put together. This fundamental change in the ratios of the absolu increases in the social product of the USSR on the one hand and of the USA and other capitalist countries on the other, means that in the process of expanded socialist reproduction new and enormous resources have come into being which make for the solution of the fundamental economic task of the USSR in the briefest historical period.

These are the most important specific characteristics of expanded socialist reproduction in the period of expanded pbuilding of a communist economy. Let us examine some of these characteristics in greater detail.

The interdependence of the level of economic development nd the rates of expanded reproduction constitute one of the entral problems for analysis of the development of the economy under the conditions of all-out upbuilding of communism. How has the high and increasing level of economic development achieved affected the rates of expanded reproduction? What regularities can be determined here? What, n this respect, are the fundamental differences between apitalist and socialist economies? How has this interdependence shaped up in the specific historical conditions of levelopment of the USSR at its present stage?

Bourgeois economists and economists of the revisionist ue assure us that under any social structure the rates of xpanded reproduction inevitably diminish as the level of he economy increases. In accordance with the phrase of ne German brougeois economist, "Past progress bars the oad to future progress."

If we take as the standard of the economic level, the relaive dimensions of the accumulated social riches and the eproduced social product (primarily its industrial portion) er head of population, then, the bourgeois economists ssert, the greater its level, the smaller the rates of exanded reproduction. The theoretical justifications for this onception vary. Many bourgeois economists base it on he notorious theory of the declining rate of profit. Others, he economists of the Keynesian school, are inclined to reate this conception with an allegedly inevitable drop in the ntensity of accumulation as the mass of previously acumulated productive capital per head of population inreases. A third group sees a connection between the iminution and the rates of reproduction with the ever greatr transfer of the population to the non-productive sphere, tc.

It is not difficult to discover the basis of apologetics n all these theoretical constructions. Their object is to epresent the diminution in the rates of expanded capitalist eproduction not as a process inherent solely in the capialist economy in the epoch of imperialism, but as some ort of general law, apparently inherent in the reproductive orces and therefore characteristic of a socialist economy s well.

If we turn to the history of the development of the econmies of the capitalist countries for a more or less lengthy eriod, it is not difficult to find a regular point of inlection in the rates of expanded reproduction, and the onset f a period of substantial decline in these rates. Let us exmine data on the economy of the USA. The average rates f increase in the national wealth of this country per head f population, according to the calculations of the well-known merican economist Goldsmith, rose from 2.19% during the rst half of the 19th century to 2.53% in its second half. As apitalism entered the stage of imperialism these figures ropped sharply, to 1.28% in the first half of the 20th entury, whereas during the second quarter of our century he figure is only 0.66%, or in other words only a quarter f what it was during the second half of the past century. we turn to other indices of reproduction in the USA — he movement of the figures for the product, the national inome, productive capital, etc., — we find other specific ndices of dynamics. However, the fundamental tendency s the same — reduction in the rates of expanded reprouction. The same may be determined with respect to the ynamics of expanded reproduction in the other capitalist counries — England, France, the Federal German Republic, etc.

The drop in the rates of expanded capitalist reproduction during the imperialist stage is something that, as we have noted, bourgeois economists and revisionists attempt to present as a general law, conditioned by the level of economic development achieved, and primarily by industrial conditions. However, a scientific examination of the interrelation among the factors in expanded reproduction and its rates upon the basis of Marxist theory of reproduction reveal the complete invalidity of this new dogma of modern bourgeois political economy.

The interrelationship among the fundamental elements of production and its rates may be expressed by the following formula:

$$t = \frac{Np_0 + K_0}{K_1}$$

where t is the rate of expanded reproduction of the social product, that is, the ratio of the dimensions of the social product during a given period to its dimensions during the initial period under examination; Np_0 is the share of productive accumulation in the social product, all of the ratio of all the accumulated elements of fixed and circulating capital to the total product; K_1 and K_0 are the coefficients of capital in production during the given period and the initial period, or in other words, the ratio of the mass of production capital employed to the mass of the products in the two respective periods (1).

In accordance with this formula, the rates of expanded reproduction of the social product are directly dependent upon the magnitude of the share of productive accumulation and the capital coefficient of the initial period, and in inverse ratio to the magnitude of the capital coefficient in the current period.

How do these fundamental economic parameters, determining the rates of expanded reproduction, change under conditions of contemporary capitalism, and under socialism?

Data available on the dynamics of capital saturation in the reproduced social product for the capitalist countries show that since the beginning of the 1920's, a stable tendency to reduction in the capital coefficient may be observed (2). All other conditions being equal, the influence of this tendency would cause the rates of reproduction not only to drop, but on the contrary, to increase. In fact, as we have seen, they decrease. Consequently, the matter at issue has to do with another parameter — standards of productive accumulation.

How could the standard of productive accumulation have been shaped, and how is it actually shaping up?

Due to the increase in the organic composition of capital, there is a tendency to reduce the share of the national income in the product. This, in turn, should influence the rate of accumulation so as to diminish it. However, on the other hand, the increase in the rate of exploitation results in an increase in the capitalist share in the national income. This, all other conditions being equal, creates the possibility for maintaining non-diminishing standards of accumulation in the product. If this possibility were to become a reality under modern capitalism, the rates of capitalist expanded reproduction would not diminish. However, modern capitalism, despite the increase in the share of the capitalists in the national income, is, because of its deep antagonistic contradiction, incapable not only of increasing but of sustaining the share of accumulation at a given level. An ever increasing share of the national income acquired by the bourgeoisie is employed for non-productive purposes, and an ever smaller share is going to the needs of accumulation. As a result, a tendency to reduction in the rates of expanded reproduction comes to dominate. Thus, the tendency to a decrease in the rates of reproduction is by no means a result of the high level of economic development, but is an inevitable consequence of the increase in antagonistic contradictions in modern capitalism.

The assertions by bourgeois economists and their revisionist echoes to the effect that the rise in the level of economic development in the USSR will also inevitably be accompanied by a damping of the rates of expanded reproduction are nothing but an effort to depict the movement of socialist expanded reproduction by mechanical analogy to capitalist reproduction. This is, so to speak, a result of projecting the curves of capitalist dynamics upon the socialist economy, which in reality is characterized by fundamentally different dynamic curves.

What are the regularities of movement of the economic parameters examined above which determine the rates of expanded reproduction under the conditions of socialism? As far as the dynamics of the national economic coefficient of capital capacity (the ratio of productive capital to product) is concerned, the high level of industrial development attained by the Soviet Union and the present-day rates of technical progress have produced a tendency for it to drop. This may be seen merely by comparing the dynamics of the fundamental productive forces of the country and the social product.

	1940	1955
Productive fixed capital	1	2.2
Social product	1	2.4
Ratio of index of social product to index of fixed productive capital	1:1	1:0.92

Thus, all other conditions being equal, the reduction in the share of capital in total production would, itself, have facilitated an increase in the rates of expanded reproduction.

Let us further examine the movement of a second decisive economic parameter — the standards of productive accumulation — under socialism.

As we know, with increase in the technical and organic composition of capital, there is involved a tendency to reduction in the share of newly created value to the total value of the joint social product, or in other words a tendency to reducing the share of the national income in the value of the social product. All other conditions being equal, this tendency should affect the standard of accumulation, causing it to diminish in the social product. However, in socialist society, these "other equal conditions" do not exist. With the intensive and rapid development of the economy based upon a systematic increase in the level of the social productivity of labor, socialist society has the possibility of paralyzing the influence of the tendency to reduction in the share of the national income in the value of the social product upon the standard (with respect to the product itself) of productive accumulation, by means of increasing it within the national income. This possibility is determined by the fact that the increase in the physical volume of the national income makes it possible, even with some reduction in the value of the share of the consumption fund, significantly to increase the volume of consumption both on the whole and per head of population.

If we turn to the actual dynamics of the share of accumulation in the national income of the USSR, we see that this share either remains constant at an unchangingly high level, or else shows a slight increase. Within this total share, there is an increase in the standard of productive accumulation. Thus, the decisive economic parameter determining the rates of expanded reproduction under the conditions of socialism — the dynamics of the standard of productive accumulation — has an effect in materially sustaining the rates of expanded reproduction so that, at the very least, they do not diminish. This theoretical concept is most im portant for the understanding of the specific rates of soci ist reproduction and the perspectives of solution of the fundamental economic task of the USSR.

Sometimes, mechanical comparisons are made in the e nomic literature between the rates of growth of USSR indu try in the pre-war five-year plans or in the period of pos war restoration of the national economy, and the present rates. Such a mechanical comparison is not scientific. D ing the prewar years, heavy industry was developed at particularly forced rates, and this was attained, as we ha noted above, by a greater or lesser limitation of the rate of growth of all other branches of material production an of the non-productive sphere. The same holds for the rat of growth during the period of recovery of the national economy after the Second World War.

Today, however, when an enormous industrial potential has been established, it is natural that such an extraordi concentration of accumulated resources upon the development of industry, limiting the growth of other branches o the economy, is not necessary. Therefore, in investigati the mutual relationships among the rates of expanded socialist reproduction and the level of economic developme of the USSR, we have to proceed specifically on the prese rates, which are inherent in the socialist economy, an ec omy that rests upon an industrial structure of material p duction that has been developed in all its aspects.

The rapid rates of growth of all branches of socialist production, the material foundation of which is a high and stable level of socialist accumulation and the reduction o at least, a lack of increase in the proportion of capital to output, will continue to be characteristic for an extended period. These rates are, as was emphasized by Comrade N. S. Khrushchev in his report at the 21st Congress of th CPSU, a law of the period of the all-out development of communism.

Preliminary calculations with respect to the increase i the volume of production of the most important types of industrial products during the next 15 years demonstrate that it is entirely possible to maintain, at a stable level, high and even rising rates of increase in material produc tion. The seven-year plan, which has set the average annu increase in industrial production at about 8.6%, that of agricultural production at 8%, and that of the national income of 7.1%-7.4%, is being overfulfilled from the very outset, and there are many branches in which the possibi ties of fulfillment of the seven-year plan in a considerab shorter period of time are becoming evident.

The high rates of expanded reproduction under the conditions of all-out upbuilding of communism are indissolu connected with serious changes in proportions in reprod tion expressed both in kind and in value. The major and determining factor of these changes is the process of cre tion of the basis for communism in material technology. our opinion, this process can be divided approximately in to three major stages.

Stage 1. A strong development of electrification in the country, of all-round mechanization of labor, and extensi introduction of automation and of chemical processes into production, or in other words, an all-round advance of te nical progress, results in the introduction of systems of machines into all branches of the production of material goods, leading to complete replacement of heavy manual labor by mechanized labor, and to the essential replacem of unskilled labor by the labor of medium and high skill. Even at this stage, a significant increase in the social pr ductivity of labor and a growth of production is achieved, and this makes it possible to record a substantial advanc in the solution of the fundamental economic problems of the USSR, and to surpass the most advanced European countries (England, West Germany, France, etc.) in production per head of population.

Second stage. The basis for production in material technology is elevated to a qualitatively new level: general electrification of the branches of material production is completed. Electronics, automation, and the introduction of chemical procedures are applied on the broadest scale, and the all-round mechanization of labor is completed. At this stage, the significant differences between the labor of the working class and the peasantry are overcome to a considerable degree, and perhaps entirely, and there is a sharp increase in the general level of skill of labor. As a result, an increase in production and in the productivity of social labor, signifying complete solution of the fundamental economic problem of the USSR, will be assured.

Third stage. The foundation in material technology will be converted into a system of universal automatic large-scale production, and the most difficult difference in quality of labor to eliminate — the substantial differences between mental and physical labor — will be done away with. In level of labor productivity and volume of output per head of population, the USSR will greatly surpass the countries of capitalism. In Marx's words, material goods will begin to be poured out in an abundant stream. Society will have everything it needs to develop the relationships of the second phase of communism.

These, it would appear to us, are approximate outlines of the major stages in the process of developing a basis for communism in material technology that will have grown in all its aspects, or in other words, the process of transforming the productive forces of socialism into the productive forces of communism. Even this very general and schematic description of the development of the basis for communism in material technology demonstrates the inevitability of a sharp change in the material and value proportions of expanded reproduction.

Let us examine some of the most important changes in economic proportions that have become clear today and will proceed more intensively during the coming seven-year plan. The general basis of these changes is the effect of the law of the priority growth of means of production. The creation of the foundation for communism in material technology presupposes a harmoniously coordinated development of all branches of the national economy on the basis of more rapid rates of increase in the production of means of production.

The bourgeois economists and the revisionists are attempting to deny the law of priority growth in the production of means of production. The priority rates of increase in production of means of production are something which they declare to be an historically-transient phenomenon characteristic only of a particular stage of economic development, to wit, the stage of the establishment of the industrial structure of the economy. In advancing this contention they offer the following motif: as technical progress proceeds, "labor-saving" inventions are replaced by "capital-saving" innovations, and when the latter type of technical progress wins out, the foundation for priority growth in the production of the means of production will, as it were, disappear. The scientific invalidity of any such conception is obvious. The point is that bourgeois economists substitute a private property approach to analysis of the character of technical progress for an approach based on the national economy. It goes without saying that either "capital-saving" or "labor-saving" innovations may predominate at a single enterprise, in a monopolist combine, or even in an entire branch of industry. However, on the scale of the entire national economy, innovations economizing concrete labor are inevitably related to the continuing process of equipping concrete labor with abstract labor, that is, an increase in the technical and organic composition of capital. And this means that "capital savings" proceed alongside an even more rapid rate of "labor-saving," or in other words that, in the final analysis, the share of concrete labor diminishes in the production of the total product, the share of abstract labor increases, and an even smaller absolute expenditure of abstract and concrete labor is incorporated into each unit of product.

The high rate of technical progress during the period of the upbuilding of the foundation of communism in material technology conditions a high rate of operation of the law of priority growth of production of the means of production. Important shifts in the economic relationships among various elements of reproduction accompany this. One of the most important of such shifts occurring at the present time is the sharp change in the relationships between the basic (raw-materials-producing and fuel) industries on the one hand, and the manufacturing industries on the other. The history of the creation and development of the industrial structure of the USSR economy, like that of other economically-developed countries, shows that branches of manufacturing industry in Department I usually exceed, for a long period, the rates of growth of branches in the extractive and fuel industries. This is comprehensible, as a single unit of raw material will, as the country's industrial development proceeds, pass through an ever larger number of stages in the consecutive process of industrial transformation.

The current seven-year plan is characterized by substantially different proportions in the development of the basic (raw materials and fuel) and manufacturing branches of the industry of the USSR. This is borne witness to by the following data on the rates of expanded reproduction of the corresponding branches of industry in accordance with the seven-year plan of development of the USSR economy for 1959-1965:

	Increase during the seven-year plan
Industrial production as a whole	About 80%
Pig iron	64-77%
Steel	57-66%
Aluminum	2.8-3 times
Refined copper	90%
Chemical production	About 200%
Petroleum	More than 100%
Gas	400%
Electric power	110-120%
Machinery manufacture and metal processing	About 100%

Thus, the current seven-year plan is characterized not only by a significant approximation of the rates of increase between the extractive and processing industries, but by a more rapid increase in production in a number of raw-material producing branches (nonferrous metals, petroleum, the chemical industry, gas, etc.) than in the processing branches of industry.

What is the reason for these significant changes in one of the most fundamental sets of proportions in kind in socialist production? If we speak of the most important and decisive cause, it is the fundamental technological revolution increasing in the process of the upbuilding of the basis for communism in material technology (the introduction of machines of ever greater efficiency and the combination of this process with significant changes in the structure of the apparatus of production). The reorganization of the fuel balance of the USSR — increasing the share of liquid and gaseous fuel from 31% in 1958 to 51% in 1965 — and the corresponding reduction in the share of solid fuels, primarily of coal — is one of the most important factors in the all-round technological improvement of the material foundation of the national economy. The reorganization of the fuel balance requires serious changes in all the heat engineering equipment of industry and that of other branches of the national economy, and this in turn places serious demands upon the machinery-manufacturing industry, construction, etc. The high rates of growth in the production of nonferrous metals and the chemical industry, which are considerably higher than the rates of development of manufacturing industry as a whole, reflect profound progressive engineering and technical shifts in production relating to the introduction of the latest achievements of science and engineering.

It is natural that these technological and economic shifts in the national economy giving rise to multi-faceted changes in the relationships among various departments of material production require a significant approximation of the rates of expanded reproduction of the ferrous metals to the average rates of growth of industrial production as a whole. Despite the serious achievements in the field of rationalization of utilization of ferrous metals, the intensive process of change in the proportions of products manufactured inevitably involves some slowing down of the reduction of the share of metal in the total social product.

Another most important shift in the proportions in kind to be witnessed in socialist reproduction has to do with the ratios between the rates of growth of industrial and agricultural production. Over a long period of time, the rates of expanded reproduction of agricultural production in our country lagged sharply behind the rates of development of industry. As a result of the measures taken by the Party and the government, a decisive change has occurred in the development of agriculture. Agricultural production is rapidly and surely progressing upward. During the current seven-year plan, it is planned that the rates of expanded reproduction of agricultural production and of industrial production will draw closer to each other. Whereas the growth in industrial production from 1959 to 1965 will rise approximately 80%, agricultural production will increase by 70%. Under the conditions of the all-out upbuilding of the basis for communism in material technology, we shall be entering that stage in the development of the productivity of agriculture foreseen by the genius of Marx, who pointed out that at a particular stage in the development of industry, the non-comparable rates of growth of production in industry and in agriculture will have to diminish, or in other words, that the productivity of agriculture will have to increase substantially more rapidly than the productivity of industry(3).

The lack of correspondence between the process of expanded reproduction in agriculture and industry is currently being eliminated on the basis of the technological equipment of agriculture, and the advantages of its socialist forms. Alongside the pronounced approximation of rates of increase in agricultural and industrial production, the productivity of labor in agricultural production is today increasing more rapidly than in other branches of socialist production. As we know, a doubling of labor productivity on the collective farms is planned for this seven-year period, as is a rise of 60%-65% in state farm labor productivity, whereas the same figure for industry will be 45-50%, for construction 60%-65%, etc.

The significant approximation between the rates of increase in agricultural production and those in industry reflects one of the most important aspects of the develop ment of the basis for communism in material technology which is intimately related to expansion of all the materi possibilities for an upsurge in the people's living standar (expansion of food supplies, increase in the overall comp of branches of production producing consumer goods, etc

It is impossible, of course, to provide any kind of rela tively complete examination of all the complex and multi farious shifts in the proportions of reproduction in kind induced by the upbuilding of the foundation of communism in material technology. Here we shall pause to consider a few significant changes. In this connection, it must be emphasized that there is no proportion of reproduction in kind that will not undergo profound and fundamental char in the course of the upbuilding of communism, changes determined by the development of the new structure of pr duction and subordinated to the creation of optimum cond tions for an undeviating and rapid rise in the economy.

Changes in the proportions in kind are indissolubly rel to intensive shifts in the multifarious value proportions among elements of expanded reproduction. Thus, with a further serious rise, during the current five-year plan, c the technical and, consequently, the organic composition socialist capital, and the related tendency toward a notic able reduction in the share of national income in the tota social product, the rate of accumulation (the share of the accumulation fund in the national income) not only remai at a stable high level but even shows some increase. Whereas the national income from 1959 to 1965 is to rise by 62%-65%, the consumption fund will rise by 60%-63%. The increase in the share of accumulation within nationa income is dictated, in the first place, by the intensive ra at which the process of development of the material foun tion of production is developing, and by the need to susta generally high rates of reproduction in the presence of sharp changes in proportions between fixed elements as measured in kind. Secondly, the major investments in ho ing and urban services and other branches of social and cultural services to the urban and rural population are a factor. In this connection, it must be borne in mind that solution of the problem of optimum combination of the ac cumulation and consumption funds in the process of upbuilding of the material-and-technical foundation of comm nism is significantly eased by the possibility of employin the large and ever-increasing amortization capital both f expanded production and for replacement and modernization of productive fixed capital. Having accumulated enor mous fixed capital, the Soviet Union, like any industrial country, today has available each year not only the capita accumulations but an enormous amortization capital whic goes to meet the needs of new construction and the recon struction of enterprises in operation. Suffice it to say tha of the approximately two trillion rubles of centralized ca tal investments envisaged for 1959-1965, our preliminary calculations indicate that more than one-tenth of this sum will come out of amortization capital.

Major shifts are also occurring in the structure of the accumulation fund itself. Whereas the volume of capital investment during the current seven-year plan will rise 80% over the preceding seven years, the volume of invest ments in heavy industry will double. Also noteworthy is t fact that the investments in the various branches of agric ture will be increasing at the same rate as those in indus Sharp changes are also occurring in proportions within branches of industry (increased rates of growth of invest ments in, for example, the petroleum, gas and chemical industry, the construction of electric power stations, etc.).

A most important problem in the establishment of proportions for the utilization of accumulation funds is that of assuring that they will be optimum in size. Determination of optimum proportions is an exceedingly complex matter. It relates to balance calculations of the optimum structure of the product to be reproduced and assurance of a maximum volume of its production at minimum socially necessary expenditures. One of the most important trends in the solution of this problem is reduction of the proportion of capital to the social product. We have seen that this tendency is characteristic of the national economy of the USSR as a highly developed industrial country.

During the current seven-year plan, and in the more distant future, there will be major reserves for reduction in the proportion of capital to output. For example, according to the plan for 1959-1965, capital investments are to increase at a slightly more rapid rate than production and the national income. However, from the very beginning of the carrying of the seven-year plan into life, possibilities for important savings in capital investments have made themselves felt. A major role in this respect is being played by the movement, sponsored by a number of economic councils and approved by the CC CPSU, to increase production output of modernized and rebuilt equipment.

In all branches of socialist production, possibilities exist to achieve a substantial increase in the efficiency of utilization of capital investments by improving their structure. In this connection it should be observed that in the USA, about 35% of gross capital investment goes to construction pure and simple, and 60%-65% goes to equipment. However, in recent years, the percentage of the capital going to rebuilding and modernization of equipment has come to 50% to 65% of the entire capital investments in the industry of the USA.

It goes without saying that, because of the social and technological-and-economic differences existing, the different rates and structure of expanded reproduction in the USSR and the USA, the American proportions for employment of capital investments cannot serve as a standard for us in any way. However, the data we have submitted testify to the serious possibilities existing for improving the efficiency of capital investments in the USSR by changing their structure: in our case, more than 60% of capital investment is still going into pure and simple construction, and only about 40% into equipment.

Shifts in the value proportions of the accumulation fund are combined with rapid shifts in the fundamental value proportions of the consumption fund. Shifts in the formation of the people's income are taking on primary significance. During the seven-year plan, a serious rise is to occur in the wages of the low- and medium-paid strata of workers and office workers, or in other words, there is to be a significant approximation of the payments to various categories of people. An important role in changing the value proportions is to be played by the accelerated growth of the social consumption funds and other expenditures by the government upon the social and cultural servicing of the population.

Thus, socialistically expanded reproduction during the period of all-out upbuilding of communism is characterized by profound shifts in the entire totality of proportions in kind and in value within the economy, reflecting the process of intensive changes in the structure of the socialist economy, and its gradual transformation into the structure of an economy corresponding to the higher phase of communism.

Expanded reproduction of the socialist relationships of production proceeds in indissoluble unity with the expanded reproduction of the forces of production, which is the process of creation of the productive forces of communism. The foundation for the creation of the system of productive relationships of communist society is the development of the relationships of socialist society in both its forms. In this process it is, in our opinion, also possible to foresee three most important stages corresponding to the stages in the development of the foundation of communism in material technology.

Stage one. On the basis of the multiplication and reinforcement of public socialist property, increase in the quantity of government-owned industrial and agricultural enterprises and a rise in their level of technology, an expansion in the socially performed work of and an increase in the indivisible capital of the collective farms, and an increase in the foundation for collective farm production in material technology, there proceed the following important shifts in property relationships and in all other relationships of production: first, there is a significant increase in the level of maturity of the social character of labor (concrete labor becomes ever increasingly equipped with technology, multifarious ties among aspects of the labor process develop, and specialization and coordination become more profound); secondly, the elements of the future communist division of labor increase to an ever greater degree, as is revealed in the erasure of social differences in labor, and the elimination of heavy, unmechanized, unskilled labor; levels of skills come to approximate each other significantly; thanks to the progress of its foundation in machinery and power, agriculture witnesses a significant reduction in the difference between farm labor and industrial labor; an increase in the cultural and technical level of the workers and peasants occurs in city and countryside, and this facilitates overcoming the significant differences between mental and physical labor; thirdly, the rapidly developing forms of coordination of labor, based upon coordination of personal material incentive to workers in the results of their labor and an all-round developing social stimulus to labor, proceed rapidly.

The rise, as a result of these processes, in the level of social maturity of socialist property defines the corresponding development of the forms of socialist management and administration of socialist production (expansion of the rights of the enterprises and direct relations among them, an ever increasing involvement of the masses in management and industry through production conferences, the enforcement of the production functions of the trade unions, introduction of direct monitoring by the party organizations of the activities of industrial management, the enforcement of collective farm democracy, etc.).

The rise in the level of social maturity of socialist property is also manifested in an all-round development of economic ties between town and country. There is an expansion in the mutual deliveries of means of production and consumer goods, and expansion of government forms of property servicing collective farm production. Simultaneously, there is an ever greater development of the enterprises based upon the combination of government and collective farm property, as well as of forms of inter-collective farm property. General national insurance reserves are established, to meet the needs of reproduction in both sectors of socialist production.

The development of socialist property and the change in the actual position of the working class in production (erasure of the significant differences in types of labor) also presupposes important shifts in relationships in distribution. Serious approximation of the levels of payment for the labor of various types of working people occurs specifically during this stage. It must be emphasized that the basis of this process is not only the need to overcome the major discrepancies in the payments to various groups of workers that had come into being in the past, but also (and this is the decisive circumstance) the change in the level of skill of labor, equalization of the level of skill accompanying a general upsurge therein, or in other words the process of elimination of the actual inequality in the positions of working people in a socialist society of which Lenin spoke and which, as Marxism-Leninism teaches, is outlived only gradually in the course of the transformation from socialism to communism, will occur.

Finally, the stage of development of property relationships under examination is characterized by the maturing of all the necessary economic conditions for complete socialization of production. The collective farmer's subsidiary private plot will exist so long as it is profitable to him, that is so long as the collective farm is incapable of satisfying all the needs of the collective farm family. However, as the public economy rises and the economy of the collective farms is reinforced, the economic undesirability for the collective farmers to expend their labor in their subsidiary private plots, which yield little, will become obvious, and conditions will come into being for substitution of the public enterprise for the private plot, with important gain to the collective farmers. At this stage of development of the property relationships, the personal private enterprise of the collective farmer is gradually losing its significance, and production will be transformed in its entirety to the basis of socially-owned property.

Stage two. Its material foundation is completion of the electrification of the entire national economy, all-round and complex mechanization, and other forms of technological progress. On this basis, all the processes examined above of transformation of the forms of property, of the character and coordination of labor, and of the distribution relationships from socialist to communist, will develop. The existing differences between the types of physical labor, of persons of different skills, will be substantially erased, in view of the fact that all labor will become highly skilled. Also overcome to a considerable degree or in their entirety will be the significant, that is, social differences between industrial and agricultural labor. The uplifting of collective farm-and-cooperative property to a level of general public property will be completed, and the two forms of property will be prepared for merger or will undergo complete merger into a single form of social property. The merger of collective farm-and-cooperative property into a single general public property is, as Comrade N. S. Khrushchev emphasizes, not a simple organization economic measure, but the solution of the profound problem of overcoming the significant difference between town and country. Thus, a decisive step along the road to transition to the higher phase of communism will be realized.

However, this transition will not be completed during this stage, as social differences will be retained between mental and physical labor, as will the need for distribution of the product in accordance with labor contributed, commodity production, etc.

The foundation for expanded reproduction of property relationships in the third stage is the complete construction of the foundation for communism in material technology. The basis for production will become an all-round automatic system of machines. In production per head of populati and level of social labor productivity, the USSR will far su pass all the capitalist countries, including the USA. The level of social maturity of property will rise sharply than to the final erasure of all the social differences in labor, and the last difference, that which is the most difficult to overcome, the difference between mental and physical lab will be done away with. All the people who work will be transformed, in reality, to workers of communism equal their position in the production of society. The forms of social development and cooperation of labor, arising on th basis of the unified social property, will acquire a consistently communist character. Commodity production will disappear, and its place will be taken by communist production and distribution of the products of labor. Distribution in accordance with labor will yield to distribution in accordance to need.

These, in our opinion, are some of the general contours of the process of expanded reproduction of economic relationships in the period of all-out upbuilding of communi Many shoots of the new relationships are arising in the practical work of constructing a communist society. The job facing science is to give them careful study and gener zation, and to elaborate measures that will facilitate the undeviating rapid progress of the economy, and the most rapid solution of the historical problem of the upbuilding of complete communism.

FOOTNOTES

(1) This formula is obtained by transformation of anoth formula: $N_{po} = tK_1 - K_o$, the validation of which is provid in our work, The Social Product and Its Structure Under S cialism (Gospolitizdat, 1958, pp. 514-517). Questions of quantitative interrelationships of factors in expanded repr duction are also examined in an article by M. Bor publish in the journal "Problems of Economics," No. 7, 1959 (Russian edition).

(2) According to Goldsmith's data, "The national capita coefficient" (that is, the ratio of capital to the product) in USA has changed as follows: 1900—2.51, 1940—2.10, 1950 1.71 (R. Goldsmith, "The Growth of Reproducible Wealth the USA from 1805 to 1950," Income and Wealth, Series T pp. 297-8). According to data in Fortune, No. 6, 1956, pag 38, this coefficient dropped from 2.0 to 1.48 between 1920 and 1956. A detailed description of contemporary tendenc to reduction in the capital factor in production is presente in the article by Y. Kvashi and V. Krasovsky, published in the magazine "Problems of Economics," No. 8, 1959 (Russian edition). Although we agree with the conclusions from the specific analysis of these tendencies, we do not share the author's proposition to the effect that "due to the employment of the new technology, the value of fixed producti capital is increasingly rising relative to the value of the product" (page 3). If this were the case, the share of capi in the product would not be decreasing, but increasing. T fact is that it has decreased, and this applies equally to th physical volume of the product and to its value measurem

(3) See Karl Marx, Theories of Surplus Value (fourth volume of Capital), Part II, Government Printing Office f Political Literature, 1957, pp. 103-104 (Russian edition).

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A. Grusho and E. Shteingauz:

The Development of a Unified Balance of Fuel and Power

Considerable experience has been acquired in our country 1 the development of balances of material goods, including alances for fuel, electric power, light, petroleum, etc. 'hese balances make it possible to determine the economy's eeds for resources of fuel and power, the methods and neans of satisfying these needs, and establish the proporions of development that have to be maintained between the uel and power branches of the economy on the one hand, and ne branches consuming their products, on the other. The xperience acquired in developing these balances is of maor scientific and practical value, and makes it possible now o proceed to new and more advanced methods of planning ne development of the fuel-and-power base for the country.

One of the problems that has matured in this field is that f progressing, on the basis of the existing system of balnces, to the compilation of a unified balance of fuel and ower. The scale of the fuel and power foundation that has ow been established, and its complex nature, reaching into nany fields, does not make it possible to limit ourselves o separate balances for fuel, heat and electric power, but equire an all-sided mutual coordination into a unified fuelnd-power balance. The State Planning Committee of the SSR has developed a special committee to elaborate roblems of the fuel-and-power balance of the USSR for 959-1965. The fundamental concepts and recommendaons of this committee are employed in the present artile.

The absence of a unified fuel-and-power balance has a egative effect upon a number of indices of economic effiiency in the development of the power industry, and primarily upon solution of problems of rational structure of fuel recovery and utilization. The inadequate level of prospecting in the past period and the weak study of the technical and economic indices of production of various types of power resources have been reflected upon the development of production and utilization of petroleum. The underestimation of the changing economic characteristics of fuel recovery and transportation resulted in an unjustified development of a number of fuel resources that were of low economic value. The planning in isolation of the relative shares which various types of fuels, light petroleum products, heat and electric power would play in industrial enterprises lead to standards that did not rest on sufficiently valid foundations and did not create adequate stimuli for the elimination of losses and for a general saving of power.

Experience shows that rational development of the country's power system and an increase in the economic efficiency of the branches of industry extracting and employing fuels requires the elaboration of unified fuel-and-power balances both for the USSR as a whole and for its various economic geographic districts. The development of a unified fuel-and-power balance should serve to economize the country's resources of materials, labor and money and should bring about a pronounced rise in the efficiency of capital expenditures, as well as a growth in the productivity of the labor of society.

Table One presents the composition of the output of the primary sources of power in 1958 and that planned for 1965, and will assist in characterizing the dynamics of the development of the country's power sources.

Table 1

Structure of Output of Primary Power Sources, USSR, 1958 and 1965
(without decentralized procurement of fuel by the rural population)

	1958		1965	
	Output, in conventional fuel units, millions of tons	Share, in percent	Output, in conventional fuel units, millions of tons	Share, in percent
Coal	365.2*	58.1	439.2*	41.8
Petroleum	161.9	25.7	343.2	32.7
Natural gas and refinery gas	33.7	5.4	177.9	17.0
Peat	20.0	3.2	27.0	2.6
Firewood (excluding losses and utilization for other than heating purposes)	24.9	4.0	25.7	2.4
Combustible shales	4.5	0.7	7.5	0.7
Hydroelectric power	18.2†	2.9	29.5†	2.8
Total	628.4	100	1,050	100

Losses in beneficiation included in conversion coefficient.

Production of hydroelectric power calculated on basis of average fuel consumption per kilowatt-hour in thermoelectric power stations.

The structure of the production of primary power resources in 1958 and 1965 presented above demonstrates the enormous quantitative and qualitative changes that will take place during the forthcoming period in the country's fuel-and-power balance. The production of primary power resources will increase by 68.7% from 1958 to 1965. There will be a pronounced increase in the cheapest types of fuels—gas and oil, which will total 49.7% in 1965, and 51% in the structure of the production of fuel alone.

Also of interest is a tracing of the trends in utilization of primary resources of fuel and power. The committee for Developing a Unified Fuel and Power Balance for 1959-1965, established in the State Planning Committee of the USSR, has determined, with the aid of expert advice, the trends and utilization of primary power resources with respect to the various types of energy and power producing installations. The results show that at present about 39% of all the primary power resources are converted into electrical and mechanical power for purposes of motive power and illumination; about 29% is employed as high-caloric heat, and about 32% as medium-and-low-calorie heat.

Thirty-eight percent of the power resources are employed to create motive power, and to serve high-temperature and electrical engineering processes in industry. This is a clear testimony to the enormous scale on which our country has been industrialized. In the total balance of consumption of fuel-and-power resources, the share of the most progressive and advance installations—electric power plants—currently represents about 26.5% of all the resources, and will rise to 28% in 1965.

However, because steam locomotive traction, which is uneconomical (its coefficient of fuel utilization is only 4%) still remains on the railroads, the consumption of power resources for transportation purposes is unjustifiably high (20%). In connection with the rapid rate at which the railroads will be converted to electric and diesel traction, the consumption of primary power resources in transportation will, by 1965, constitute only 11% of the total production thereof. The consumption of power resources is still considerable (about 15%) in the satisfaction of the needs of heating furnaces, household equipment, etc., which are decentralized and work at low efficiency. By 1965, the share of such consumers will also diminish and will represent only 12% in toto.

As already observed, the primary objective in developing long range and annual fuel-and-power balances is to arrive at an economically valid definition of the proportions among all types of power resource production, the discovery of proper trends in capital investments in the fuel-producing branches of industry and power, and determination of the most efficient methods of utilizing all the power resources and all the types of power and fuel.

In accordance with these objective, the development of a unified fuel-and-power balance demands:

a) A valid determination of the need for various types of energy in toto and with respect to individual groups of consumers and production processes, with a further breakdown of these needs in accordance with the requirements posed by various processes with respect to the qualitative nature of the energy employed. In this light, the following most typical groups of processes may be identified as of today: illuminating and power-drive processes, mechanical engineering processes, high-temperature processes, industrial and household processes requiring medium and low temperature heat (primarily steam and hot water);

b) the selection of rational, economical and technically justified forms of energy and energy carriers for those consumers and processes whose needs for energy may be satisfied by various types of energy carriers;

c) determination of rational methods of selecting the required types of energy and energy carriers, that is, selection of sources for the generation (transformation) of ener and the degree to which they require primary sources of ener

d) the selection of economically justified types of power resources and fuel to satisfy the need of energy generatin installations, and installations making direct use of fuel, on the basis of an all-round evaluation of the economics o the extraction, transportation and utilization of various ty of energy resources in various power installations.

Solution of the first three of these problems defines the output side of the energy balance, or in other words, the need for all types of primary energy resources and fuel. The selection of economically justified types of energy resources and, as a consequence, of the scales on which the have to be produced and recovered defines the input side o the fuel and energy balance.

Installations employing primary resources of energy ma thus, to a considerable degree, be regarded as a link in th fuel-and-energy balance, connect its input and output side into a unified whole.

Below, we present a scheme for a fuel-and-energy balance to cover reports and future prospects. The filling ou of Table A of this scheme determines the primary energy consumers in the national economy, as well as the quantit of energy, both as to types and processes, required by various branches.

The columns headed “Agriculture”, “Housing and urban services in cities and towns” are also broken down, when the balance is compiled, in terms of the uses to which the energy is put.

Table B shows either the past or projected distribution of output of energy installations dealing with various types of energ Table C answers the question as to which fuel resources are employed or should be employed in developing this energy

In its general appearance, the design of the unified fuel-and-power balance is set up to provide a complete picture of the quantity and types of primary energy resources: coal, petroleum, gas, etc., their employment in various branches of the economy and various types of equipment, as well as the amount of energy converted (electrical, fuel etc.). Thanks to this fuel-and-energy balance layout, it is possible to determine the quantity of extraction, consumption and conversion of all these energy resources require for the national economy as a whole.

The mutual relationship between and the dependence of the solutions of the fundamental problems of the fuel-and-energy balance require that its development proceed in a series of successive stages. This renders desirable a preliminary elaboration of a series of balances constitutin component portions of the unified fuel-and-energy balance. Development of these preliminary balances, subject to lat refinement, must be pursued along two lines: with respec to the most important types of energy and fuel, and with respect to the various major consumers, branches of the national economy, and districts.

The following should be classified in the first group of balances—that pertaining to the most important types of energy and fuel:

1. The electrical energy output and consumption balanc (the electricity balance)
2. The low- and medium-potential heat development an consumption balance (the heat balance)
3. The petroleum products production and consumption balance (the petroleum balance)
4. The natural and artificial gas production and consum tion balance (the gas balance)
5. The solid fuels extraction and consumption balance - coal, peat, shales and firewood.

Table 2

Schematic Diagram of a Unified Fuel-and-Energy Balance
A. Consumption of Energy in the National Economy

Branch of national economy, and processes	types of energy and energy carriers				total
	mechanical energy	electrical energy	high temperature heat	low temperature heat	
Industry: total					
Including:					
a) Illumination					
b) Power processes					
c) Industrial processes, etc.					
Transport: total					
Including					
a) railways, etc.					
Agriculture: total					
Housing and Urban Services, in cities and settlements: total					
Total energy consumption					
Energy losses during transmission and distribution					
Total energy production required					

It is clear from these data that the total increase in electrical energy of 120% during the seven-year plan will be accompanied by a considerable change in the structure of consumption by various branches of the economy. Thus, illumination, power needs, and technological processes in industry will require nearly three times as much electrical energy in 1965 as in 1958, transportation will employ 150% more, and other branches of the national economy will need 30% more.

In determining the trends in the developments of the electricity balance, serious attention must be given to problems of rational utilization of electrical energy, further introduction thereof into production, technological and household processes.

As may be seen from the tentative indices presented, considerable changes will occur in electrical energy consumption during the current seven-year plan. In industry, in addition to the further introduction of electricity into processes requiring power, there will be a very extensive development of employment of electrical energy for technological purposes, including high-temperature processes. In connection with the electrification of the major railways, there will be a pronounced increase in the consumption of electrical energy by transport. Improvement in the cultural-and-household services to the population, the increase in its material welfare, and the tremendous rise in housing construction will induce a considerable increase in expenditures of electrical energy for housing-and-public service requirements in towns and agricultural districts. A proper solution of the problem of utilization of electric power for high-temperature technological processes will require a joint analysis of the electrical and gas balances and the economic characteristics thereof.

Rational development of the country's resources of electrical energy depends to a considerable degree upon a correct determination of the structure of the capacities generating electric power: the correlation, in the total balance of capacities, and the actual generation by hydroelectric stations, atomic installations, and thermal electric power stations. In turn, the economic efficiencey of structures and the exploitation of thermal electric power stations will depend to a considerable degree upon the selection of rational relationships between the capacity and generation of rayon condensation power stations, on the one hand, and industrial and urban heat-and-electric power central stations, on the other. The decision as to a rational capacity for a heat-and-power central station depends to a considerable degree upon the consumers, inasmuch as the maximum economic efficiency in the construction of such stations is achieved only when they are used to supply large-scale industrial consumers of heat or to release heat to neighborhoods in which multiple-story dwelling houses exist. Determination of the amount of heat needed for any given branch of the national economy, and of rational distribution among generating installations, will be assisted by the heat balance (see Table 4).

This heat balance is schematic. In elaborating it, greater detail will be necessary, to wit; the heat requirement of grouped consumers should be broken down into its individual components. For example, the total for industry should have the following components: a) for power, b) for industrial purpose, c) for heating, d) other. The method of subordinate classification is also applied to the other indices.

Analysis shows that in the field of centralization of heat supply and satisfaction of the heat needs of industry from heat-and-power central stations, considerable progress has already been achieved. The heat consumption of housing and public services provided by heat-and-power stations has had considerably less development, and this is explained primarily by the large number of buildings with furnace heat, and of homes consisting of few stories, in which case the provision of heating from central stations is not profitable.

By 1965, the share of agriculture, and of housing and public services, particularly in the case of buildings with central heating (in which there will be a doubling of the requirement) will considerably increase. However, the consumption of heat in districts with low buildings will still be very considerable, and this will render particularly impor-

B. Production by Various Energy Installations

Type of generating installation	types of energy and energy carriers					nature of process of production of energy			
	mechanical energy	electrical energy	high-temperature heat	low-temperature heat	total	total losses in generation	recoverable losses of secondary energy resources	secondary energy resources utilized in the process of generating energy	total requirement
Total energy output									
Including:									
a) hydroelectric stations									
b) thermal condensation stations									
c) heat and power central stations									
d) etc.									
Boiler houses: total									
Including:									
a) rayon									
b) industrial									
c) household									
d) etc.									
Industrial furnaces: total									
Including:									
a) blast furances									
b) melting furnaces									
c) coke ovens									
d) heating furnaces									
Heat-utilizing installations									

tant a rational solution of the problem of fuel supply to this group of consumers.

By 1965, nearly 36% of the heat required in the economy will be produced by central heat-and-power stations, and industry will be receiving 85% of the heat produced at such stations. The production of heat by such stations will more than double during the seven-year period.

Determination of the degree to which the share of central heat-and-power stations in the total heat supply should be increased will require economic comparisons of this procedure with that of centralized heat supply from central (rayon) boiler rooms, and with decentralized heat supply. The economic indices of decentralized installations for heat supply and rayon boiler rooms depend, in turn, upon the type of fuel utilized. Under present conditions, the possibility exists for organizing electric power supply from large-scale steam-condensation stations utilizing cheap natural gas. Therefore, the setting up of small heat-and-power central stations may prove to be unjustified. The construction of rayon boiler rooms may be more economical.

The structure of the degree to which the heat requirement is met, and consequently, determination of rational capacities of heat-and-power central stations is determin to a very great degree by the structure of the fuel balance and, primarily, by the possibility of utilizing the highest quality and cheapest types of fuel—natural gas and heavy oil—for this purpose.

In the Soviet Union, major gas-producing districts have been prospected and opened to exploitation in recent years in the Ukraine, the north Caucasus, Central Asia, and the north-east of the European portion of the USSR. Calculations show that construction of gas pipelines to supply lar cities and industrial centers with gas, particularly in the European portion of the country, is economically profitabl During the seven-year plan, 26,000 kilometers of trunk ga pipelines will be built, and this will make possible extensi utilization of natural gas in the power industry. Below, w present the cost of gas in various districts of the Soviet Union. As the table shows, except for certain districts of strip mining of very cheap coal (Eastern Siberia) natural

C. Consumption of Fuel and Energy Resources

Equipment and devices employing power resources	total primary energy resource requirement	portion of need for primary power resources covered by															
		natural, unconverted power resources							artificial, beneficiated, converted power resources								grand total
												petroleum fuel					
		coal	petroleum	natural and by-product synthetic gas	hydroelectric energy	peat	firewood	total	coke	gas	briquettes	a	b	c	products of beneficiation	total	
Total power resource requirement																	
Power stations: total																	
Including:																	
a) thermal condensation																	
b) heat and power central stations																	
etc.																	
For boiler rooms: total																	
Including·																	
a) rayon																	
b) industrial																	
c) household																	
etc.																	
For industrial furnaces: total																	
a) blast furnace																	
b) melting furnace																	
c) coke ovens																	
d) heating furnaces																	
For internal combustion engines, etc.																	
Losses of primary energy resources in transportation and during conversion to synthetic energy resources																	
Total primary energy resource requirement																	

Electric Power Consumption and Product Balance*
(in billions of kwh.)

Table 3

Indicator	Years		
	1955	1958	1965
A. Electric energy consumption			
Industry: total	113.3	151.8	335.0
Including:			
for illumination, power needs, and production	30.0	43.0	118.0
Transportation	5.4	9.0	22.0
Agriculture			
Housing and public services in cities and towns	30.3	44.2	100.0
Construction			
Total electrical energy consumption	149.0	205.0	457.0
B. Consumption in power systems and for the needs of electric power stations themselves	21.2	28.0	63.0
C. Total output of electrical energy	170.2	233.0	520.0

* In compiling the balance of consumption and production of electrical power it is necessary to specify the various components in detail. For example, the heading "Transport" must specify electrical transport individually, and the heading "Agriculture" must individually specify consumption for processes of production, for household processes, etc. The production of electrical energy has to be presented in terms of the types of electric power stations: hydroelectric stations, thermal condensation stations, heat-and-power stations, etc.

gas is the most economical type of fuel over virtually the entire territory of the USSR, both in cost and in terms of the capital investment outlay.

However, the country's fuel needs cannot be met by natural gas alone. Therefore, the basis for the gas balance cannot be the need for gas, but the projected production of natural gas and of synthetic gas as a by-product of certain other basic processes. Complete realization of the economic efficiency to be derived from the utilization of gas is achieved by rational distribution thereof among the various economic districts and groups of consumers.

The long-range gas balance of the USSR for 1965 provides, for the purpose of attaining maximum economic efficiency, profound shifts both in terms of giving priority to the employment of gas in districts where costly fuels are now used, and in terms of distributing it among various types of consumers.

The tables show how the share of natural gas is rising in the fuel balances of the various districts of the Soviet Union. Gas will be reaching the west and northwest of the European portion of the USSR for the first time during the seven-year plan, and in 1965 it will replace one-fifth and one-fourth respectively of the other fuels now being used there. In the central region, the share of gas in the fuel balance will in-

Table

Heat Balance in the National Economy (in millions of megacalories)

	Years		
	1955	1958	1965
A. Heat requirement			
Industry	319	406	680
Housing and public services	158	205	370
Agriculture	139	181	270
Transport	32	39	40
Total requirement	648	831	1,360
B. Requirement to be met by:			
Heat-and-power central stations	155	225	485
Boiler rooms	222	260	370
Decentralized installations and devices	266	339	489
Waste heat-utilizing installations	5	7	16
Total coverage	648	831	1,360

Consumption of Conventional Fuel in Heat-generating Installations (in millions of tons of conventional fuel)

	Years		
	1955	1958	1965
B. Requirement to be covered by:			
Central heat-and-power stations	31	43.5	85
Boiler rooms	52	59.5	79
Decentralized installations and devices	75	93	127
Waste heat-utilizing devices	—	—	—
Total fuel consumption	158	196	291

Table

Relative Cost of Natural Gas by Region (in rubles per ton of conventional fuel unit as of 1965)

Economic districts	Cost of natural gas	Cost of solid fuel replaced	Saving from use of natural gas
Northwest of European portion of USSR	32	130	98
West of European USSR	25	109	84
Central portion of European USSR	17	112	95
South of European USSR	13	85	72
North Caucasus	13	83	70
Trans-Caucasus	17	105	88
Urals	34.5	91	56.5
Volga region	13	97	84
Eastern Siberia	—	15	—

crease by more than 250%, in the Volga region by 50%, in the north Caucasus by more than 100%, and in the Urals 35 times.

There will be an increase not only in terms of percentage but in absolute consumption. Thus, industrial consumption of gas (in billions of cubic meters) will multiply 17-fold. Consumption for the production of chemicals and for public service and household needs will drop somewhat percentagewise, but will increase absolutely by six-fold and by more than four-fold, respectively.

Table 6

Distribution of Natural Gas Among Grouped Economic Districts

Economic districts	Share of natural gas in the fuel balance of the district, percentage	
	In 1958	In 1965
European northwest of USSR	—	25.2
European west of USSR	—	18.0
European center of USSR	6.8	26.5
Volga region	24.5	36.8
North Caucasus	12.5	27.1
Trans-Caucasus	36.8	61.0
Urals	0.8	28.0

Table 7

Distribution of Gas Among Major Groups of Consumers

	Share of group in total gas consumption, percentage, by comparision to level of	
	1956	1965
Public service and household needs	23.9	9.3
Production of chemical products	10.2	5.7*
Industrial consumption	57.3	77.3
Including:		
a) for technological needs	35.6	40.0†
b) for power needs	21.7	37.3
c) for the needs of the gas lines and gas fields themselves	8.6	7.7
Total	100.0	100.0
Grand total in billions of cubic meters	13.8	150.0

* Six-fold absolute increase

† Including: iron and steel industry — 17.8%, cement industry — 8%, machinery manufacturing — 8%, other fields — 6.2%.

Petroleum, the extraction of which is to increase by more than twice, is to play a major role in production of energy during the seven-year period. The petroleum balance is determined, primarily, by the economy's needs for light petroleum products, lubricants, etc., for aviation, and the automotive and tractor fleets. It is heavy oil that is chiefly employed for stationary engines. When the need for light petroleum products has been determined, the yield of heavy oil will depend upon the degree to which petroleum is processed. The degree of petroleum refining determines, in turn, the structure of the petroleum refineries, the capital investments required to erect them, the cost of processing and the amount of petroleum that has to be recovered.

It is obvious that a rational level of petroleum refining is something that has to be determined on the basis of economic calculations determining the efficiency, to the national economy, of the employment of heavy oil instead of other types of fuel. This efficiency depends upon the fuel with which heavy oil is compared, and the types of installations in which it will be employed.

Therefore, solution of the problem of the structure of the oil refinery and the degree to which refining is carried will vary in accordance with the area in which it is built, and the make-up of the possible consumers of heavy oil.

A rational structure of heavy oil and gas distribution can be determined only on the basis of an economic comparison of the relative efficiency of the utilization thereof, and also by comparing it with other types of fuel in different districts and for various groups of consumers. In such comparisons, it is particularly important to make a complete accounting of the requirements of different groups of consumers with respect to the qualitative characterization of the fuel. From this point of view, the fuel consumers may, to a first approximation, be divided into two major groups: consumers whose technological and economic indices depend to a very great degree upon the quality of the fuel, and consumers for whom variation in the quality characteristics of the fuel introduces comparatively minor changes into their technical and economic indices.

The following may be included among the first group of consumers: industrial furnaces, maritime and railway transport, decentralized urban and agricultural installations, etc. The second group includes the boiler rooms of large industrial enterprises, electric power stations, etc. According to available calculations, fuel consumption in the first group will, in 1965, attain approximately 750-800 million tons of conventional fuel, and, in the second group, it will be about 200 million tons of conventional fuel.

Should the first group of consumers lack sufficient resources of high-quality primary power resources to satisfy their needs, it would, as a rule, be necessary and desirable to organize intermediate processing of less desirable types of fuel by beneficiation, coking, briquetting, gasification, etc. Therefore, it is desirable to develop a balance sheet for the consumption of high-quality types of fuel to begin with, and to determine rational directions for meeting this balance.

Tentative calculations show that profound structural changes will occur in the fuel balance of consumers of quality fuels during the current seven-year plan, as a result of extensive introduction of heavy oil and natural gas into the balance. This will make for a sharp rise in the efficiency of fuel supply. However, a considerable number of consumers requiring high-quality types of fuel (primarily, decentralized installations in the housing and public service fields of cities and rural districts) will have to be provided with quality hard fuels (high-grade coals, briquettes, etc.).

Proper and economically valid construction of the country's fuel-and-energy balance requires the elaboration of these balances not only for the Soviet Union as a whole, but for the individual republics, economic districts, and, in certain cases, for individual micro-districts.

The balances which have to be elaborated in order to develop a unified fuel-and-power balance for the country should also include:

a) fuel-and-energy balances for specific branches of the economy (industry including construction, transportation, urban services, agriculture), with respect to which the solution of the fundamental problems will be found to have a number of sharply defined specific features;

b) fuel-and-energy balances for the most important enterprises, individual cities and micro-districts within economic districts, as well as for economic districts, groups of economic districts, republics, etc.

On the basis of the balances developed by the enterprises, economic councils and state planning commissions of the republics, a unified fuel-and-energy balance for the entire country has to be developed and economically validated. Determination must be made of the proportions to obtain in the production of fuel and energy resources, and a valid distribution of capital investments has to be determined both with respect to the various branches of the energy industry, and as between the production of energy and the fuel-extracting branches of industry. The most effective possible trends in these capital investments have to be sketched out.

In turn, the unified fuel-and-energy balance of the country must then be used to make the necessary corrections into the balances for the republics, rayons, and branches of the economy.

Introduction of the utilization of a unified fuel-and-energy balance into planning practice for the economy requires that certain preparatory work be done. It must be emphasized that the elaboration of fuel-and-energy balances both for the past and the future can only be an efficient weapon for monitoring and planning if a corresponding reconstruction and supplementation of the statistics now required to be compiled in expenditure and utilization of power resources and types of energy be carried out.

From this point of view, it is doubtless important to straighten out the situation existing in terms of the consumption of fuel and energy sources with respect, in the first place, to distribution of fuel among the most important groups of fuel-utilizing installations (boiler rooms, industrial furnaces, heating furnaces, transport installations, household needs, etc.) and, secondly, introduction of refinements into the data on the delivery of fuel with respect to quality (grades, sorts, etc.).

An important role in rationalization of the energy balance of an enterprise, a district, and the country as a whole may be played by utilization of the so-called secondary energy resources: the heat of the waste gases of industrial furnaces, products of industry, coolant water, etc. Failure to employ secondary sources of energy is currently resulting in losses of up to 30% of the total heat-content of the fuel today being produced. For example, a modern, large-capacity iron-and-steel complex is capable of meeting its entire need for electrical energy, steam and hot water merely from secondary energy resources, the heat of blast furnace gas, the quenching of coke, of the water used to cool blast furnaces, etc.

In the majority of cases, secondary energy resources are presently not being considered at all. The economic councils and the local statistical agencies should organize accounting of the output and utilization of secondary energy resources and should develop a method of estimating the functioning of an industrial enterprise relative to the degree of utilization of secondary resources.

In determining the need for energy and for power resources presented by any given technological process, industrial enterprise, or branch of the economy at the present time, the rule is to employ grouped standards pertaining a unit of production and determining unit consumption of fuel and electrical energy. All quota-setting is performe in terms of quantities of energy and fuel with respect to the equipment possessed by the consumer, and not with respect to the outlay necessary in terms of efficiency. Th as it were, “legalizes” the losses now occurring and doe not provide sufficiently valid stimuli for rationalization o energy installations and economizing of all types of energ and fuel.

It is, in our opinion, necessary to provide, in centraliz form, for technologically justified standards of useful con sumption of power for the various types of production, pr esses, etc., in the complex mutual coordination of the uni consumptions of electric power in various processes. Th unit outlays of useful consumption of energy should be worked out in accordance with the technological process flo sheet and its organization. Simultaneously, a scale of coe ficients of correction should be established to calculate p missible losses of energy and fuel in standard fuel-and-energy utilizing assemblies and installations.

On the basis of these standards and corrective coefficients, the local planning agencies and economic councils will be in a position to establish standards for the consu tion of energy and fuel for various industrial processes, with consideration of their technological processes and p er equipment. In this connection, it is also necessary to organize the estimate of the efficiency of operation in the field of power production by individual enterprises under economic councils, etc. The major criterion should be th coefficient of deviation of the real outlay of energy and fu from that which is technically justified.

Along with the development of methods of determining nomic indices for the production and processing of fuel, a for its transportation, as well as for the work of power in lations and networks, there must be a simultaneous analy systematization and generalization of their economic cha teristics for the report period and those planned for the f ture. Generalization of the data of local organizations, pl ning and research institutes should be engaged in by the i stitutes for economic research of the State Planning Com missions of the republics and the USSR State Planning Co mittee, which will be required regularly to issue survey reviews of economic indices in the power field both for th country at large, and with differentiation by district.

Among the major economic investigations that should now be carried out to plan a rational structure for the fue and-energy balance, we may list:

a) the comparative efficiency of utilization of electrica power, natural gas, heavy oil, for high-temperature proc esses in industry;

b) the efficiency of central heating from heat-and-powe stations, and from district boiler rooms employing natura gas;

c) the comparative economy of utilizing electric power and natural gas for high-temperature household processe From the purely economic and power point of view, utiliz tion of natural gas is more efficient. However, recent stu of the advantages, for household purposes, of electric po show that in a number of cases the utilization of electric stoves may be fully justified in the very immediate future

d) the efficiency of combination of utilization of natural gas with other types of fuel, specifically, heavy oil, becau all the economic indices for the production and transporta tion of gas depend upon the uniformity of its consumption the course of the year.

Breakdown of boiler capacity into basic and peak with

(Continued on Page 37)

(Kommunist — Communist — No. 10, 1959)

D. Chesnokov:

The Development of the Forces and Relationships of Production in the Period of All-Out Upbuilding of Communism

The 21st Congress of the Communist Party of the Soviet Union marked the beginning of a new stage in the development of the USSR, the stage of the all-out upbuilding of communism. The report by N. S. Khrushchev and the resoutions of the congress present a magnificent program for he development of the economy and the culture during the coming seven years and solve important problems of theory advanced by the practical experience of the upbuilding of communism, thereby making a new contribution to the treasury of Marxism-Leninism. The central problem before he congress was that of the further development of socialist production. The June Plenum of the CC CPSU, bringing he decisions of the congress to light, elaborated practical measures to accelerate technological progress in industry and construction, and formulated specific objectives for the creation of a basis for communism in material technology. Both the 21st congress of the Party and the Plenum of the CC CPSU provided a further advancement of the Marxist heory of the forces and relationships of production as it applies to the present stage of the upbuilding of communism.

1. Forces and relationships of production under socialism.

The socialist revolution resolves the fundamental contradictions of capitalist society, first among them the contradiction between the social nature of production and the private capitalist mode of appropriation. It eliminates the outlived capitalist relationships of production and replaces hem by new socialist relationships whose foundation is social ownership of the means of production, corresponding to the social nature of production.

The manner in which the relationships of production under socialism correspond to the forces of production is fundamentally different from this correspondence in the presocialist social and economic order.

When the capitalist relationships of production had first ome into being and corresponded to the nature of the orces of production, they opened broad perspectives for the development of production. To begin with, they freed the worker from personal caste or feudal dependence and creatd new stimuli for increase in the productivity of labor. As result, the possibility of uniting the worker, freed from he chains of caste and feudalism, with the technology developed by capitalism, arose. A worker not subject to feual oppression was in a position to display the initiative and nergy required for application of machine equipment to he process of production.

At the same time, the capitalist relationship of production inally wiped out production in kind, which was dominant nder feudalism, and converted labor power into a commodity, rendering commodity production all-embracing. This ave a mighty stimulus to the development of the forces of production, inasmuch as the greed for profit pushed the capitalists, the owners of the means of production, to connuous expansion and perfection of production, to rationaliation of its technological foundations for the purpose of maximum increase in the mass of commodities placed on the market. These circumstances, and those accompanying them, which flowed from the nature of capitalist relationships, led to the rapid development of the forces of production of capitalist society. Within a brief period of time, the bourgeoisie created productive forces unknown to the entire preceding history of mankind. The productive forces constituting the objective prerequisites for transition to a socialist society came into being under capitalism.

However, no sooner had the capitalist relationships come to dominate in society than the contradiction between them and the productive forces, the contradiction between the social nature of production and the private capitalist mode of appropriation came to be more profound and more acute and ever increasingly inhibited the development of production.

In other words, capitalist relationships of production played a contradictory role from the moment they came into being. They doubtless stimulated the development of the forces of production and opened substantial prospects for their development, but these prospects were not unlimited. From the very outset, those features of the capitalist relationships of production which demonstrated its limited nature manifested themselves. These limitations are becoming increasingly manifest, and strengthen the inhibiting influence of the relationships of production upon the productive forces. The conflict between the productive forces and the relationships to production, which matured rather rapidly, manifests itself in periodically repeated economic crises which return the level of production to its status of many years earlier. In order for society to develop normally, a social revolution is necessary that will eliminate bourgeois relationships of production which have become a brake upon the development of the productive forces.

The situation is entirely different when one examines the productive forces and the relationships of production in a socialist society. Under socialism, social ownership of the means of production, which corresponds to the social nature of production, reveals limitless perspectives for the development of the forces of production, because, under these conditions, the anarchy of production and crises yield to the planned development of society. Class conflicts are replaced by the collaboration of human beings working for themselves and for all of society. Under these conditions, it is not merely each worker individually, but all jointly who have an incentive for the maximum development of the forces of production, improvement in industrial and technical skills, and the development and perfection of technology. The rise in labor productivity under socialism leads to the increase in the wealth of society which belongs not to capitalists but to the people and consequently goes to satisfy the needs of the working masses. Inhibiting factors due to the lack of incentive to the working people in the progress of the forces of production cannot and do not exist under socialism.

The working people of a socialist society are interested to a maximum degree in technological progress for the further reason that this eases their labor. Today we no longer see a worker converted into a soulless appendage of a machine, but, on the contrary, we see the machine becoming the obedient servant of man, increasing his power over nature, easing his labor, and reducing his working time. The extra time thus acquired is employed by the worker to raise the level of his culture and to further his all-round development.

Social ownership of the means of production is the foundation of the relationships of production under socialism. The development of the forces of production under socialism leads to a reinforcement of social property in the means of production and to the perfection of the forms of socialist property. Thus, there occurs, on the one hand, the development of the productive forces, and on the other a reinforcement and perfection of the relationships of production corresponding to these productive forces. Whereas under capitalism the correspondence between the relationships of production and the nature of the productive forces is, so to speak, worm-eaten from the very outset, and contains the inevitability of conflict between the productive forces and the production relationships, their correspondence under socialism reveals ever broader perspectives for the development of the productive forces.

Does this mean that no contradictions whatever exist between the productive forces and the relationships of production under socialism? No, this is not the case. It is inevitable that various stages in the process of development, individual aspects of production cease to correspond to each other, and contradictions between them develop. Without this there can be neither life nor development. This is wholly true of socialist production as well. Under socialism, too, the forces of production represent the most flexible and revolutionary element in production. The forces of production change more rapidly than various aspects of the relationships of production can succeed in adapting themselves to the requirements of the rising productive forces.

This is the basis for an inevitable development of and systematic resolution of contradictions. For example, the development of the socialist productive forces cannot, for any lengthy period, coexist with the forms of the division of labor inherited from capitalist society. As we know, the contradiction between town and country, between mental and physical labor, came to be extraordinarily sharp. The socialist revolution and the triumph of socialism have eliminated the antagonistic nature of this contradiction. However, significant differences are still retained. The development of the socialist forces of production demands the elimination of the significant differences.

The growth of the productive forces in socialist industry and agriculture has had the result that the positive role of the system of servicing the collective farms with equipment through government-owned enterprises—the machine and tractor stations—outlived itself, and became obsolete. The interests of the development of socialist production in the countryside demanded that all the factors of production be concentrated in the hands of collective farmers in the collective farms themselves. Taking this into consideration, the party and the government adopted a decision to reorganize the machine and tractor stations and further to strengthen the collective farms, and collective farm property, primarily their indivisible funds.

In socialist society, the distribution of consumer goods takes place chiefly through commodity-and-money relationships. Commodity-and-money relationships, which have a completely new character under socialism differentiating them from commodity-and-money relationships under capitalism, play an enormous role in the development of socialist society. They constitute an inseparable and essential aspect of socialist production relationships. We are today unable to operate without money and without commodities. However, there can be no doubt that as the forces of production develop further, and when the time comes that an abundance of consumer goods are provided, and the cooperative and collective farm forms of social property merge with general public property, commodity-and-money relationships will cease to play a positive role in the deve opment of the productive forces. They will enter into cont diction with the new and higher level of their development. In order for communist society to develop even more successfully, it will be necessary to replace these relationships by direct distribution of products in accordance with people's requirements. Thus, in this respect too, commo ity and money relationships will, in some stage of social development, when socialism is transformed into a higher phase—communism—commodity-and-money relationships will become a factor inhibiting the development of the forces of production of human society. This contradiction will be resolved by overcoming commodity-and-money relationships by the process of replacing them by communis product interchange.

Under socialism, relationships of production and consum tion play the most important role in the development of production. Thanks to the fact that the relationships of pr duction and consumption lose their antagonistic character under socialism (inasmuch as production is directly and immediately calculated to satisfy the personal and social needs of socialist society), this interrelationship itself constitutes a mighty factor for the development of the productive forces.

The productive forces give rise, in the people of socialis society and in that society as an entity, to new needs and provide ever wider material means to satisfy those needs. At the same time, the social needs of human beings liberated from exploitation rise more rapidly than production is capable of satisfying them. However, this is not an antagonistic contradiction. It is constantly in the process of resolution as the result of the accelerated development of the socialist forces of production.

Thus, certain contradictions do exist between the productive forces of socialism and certain aspects of the socialist relationships of production. The progress of productio and the development of society as a whole, are unthinkable without this type of contradiction. Characteristic of these contradictions under socialism is the fact that they are no all-embracing. We are not speaking of the contradiction between the nature of the productive forces and the relatio ships of production as a whole. Contradictions do arise between the nature of the productive forces and individual aspects of socialist production relationships, and these contradictions are resolved. These are contradictions of growth and development. They are resolved consciously and gradually, and their resolution reinforces the foundations of socialist society, the social nature of production and social ownership of the means of production.

The required changes in relationships of production are brought about as the material prerequisites for this matur Attempts to leap past specific stages in the development o the forces of production and to break away from their leve can only serve to inhibit the steady progress of society to communism. For example, the conditions for transition from commodity and money relationships to direct produc interchange have not yet matured. In order to accelerate the upbuilding of communism and to facilitate this transiti it is necessary not only to develop the foundation for the society in material technology and to achieve a surplus of material goods but to improve and perfect commerce, to strengthen the Soviet ruble, and to gradually introduce the principle of cost accounting in all industrial and agricultural enterprises, etc. The progress to communism is a regularized process not admitting of anarchy and arbitrariness.

2. The Productive Forces and Relationships of Production Under the Conditions of Transition from Socialism to Communism.

The socialist society of the USSR took shape essentially during the second half of the 1930's. It has been in existence for nearly a quarter century. Despite the fact that the Soviet Union had to conduct a bitter war over a four-year period, a war that wrought colossal destruction to the productive forces of socialist society, and then had to spend a number of years in restoring the destroyed economy, the socialist forces of production had, during this period, developed several times more rapidly than the productive forces of the capitalist countries, including those which underwent no military destruction. This demonstrated the superiority of the socialist economic system over the capitalist.

At present, as was noted by the 21st congress of the CPSU, Soviet society has entered the era of all-out upbuilding of communism. The most important objective of this period is the creation of the foundation for communism in material technology, the further elevation of the material well-being and the level of culture of the Soviet people, the preparation of the conditions for elimination of the existing differences between town and country, between the two forms of social property, between mental and physical labor, and the all-sided development of Soviet people and their preparation to administer a communist society without the aid of government.

It goes without saying that the nature of the interrelationships between the relations of production and the forces of production today remains the same as it was during the earlier stages of development of socialist society: the production relations correspond to the nature of the productive forces. However, there are new factors related to the appearance and development of elements of communism at the present time.

How do these changes in production manifest themselves?

Let us begin with the forces of production. The productive forces of a society are constituted of two major components: the tools of labor and the material-and-technological means of production, that is, industrial enterprises (factories, mills, blast furnaces, electric power plants, coal and ore mines, etc.), transport facilities, the material and technological tools and equipment employed by labor in the state and collective farms, raw materials, and the various auxiliary materials required for production; and secondly, the human beings who actuate the tools of labor and carry out the production of material goods. In the course of the all-out upbuilding of communism, the productive forces of the USSR will undergo an incalculable rise.

In the years immediately ahead, colossal changes will occur in the means of production, and primarily in the tools of labor. A decisive step will be taken in the creation of the foundations of communism in material technology. In the 7-year plan immediately ahead, tens of thousands of new industrial enterprises will be founded, the existing equipment at thousands of plants and mills, coal and ore mines, and the like, will be expanded and replaced. However, the major changes in the tools of labor will be not only quantitative but qualitative. The development of socialist industry and transport will be realized under the slogan of struggle for technological progress. There will be a considerable replacement of the machine tools in the machinery manufacturing enterprises. Railways and riverways will be rebuilt, new and more powerful diesel and electrical locomotives will make their appearance on the nation's railways. One of the most important indices of technological progress during this 7-year plan will be the introduction of automation and remote control into production and the mechanization of laborious processes. The course of development of industry in the USSR has been set toward mechanization not only of fundamental but of auxiliary processes, toward the utilization of all possibilities available for carrying out multiple-faceted mechanization of industry, transportation and construction. The prerequisites have now matured for conversion from partial automation of individual sectors to combined automation of production processes and, accordingly, to the development of completely automated departments and enterprises. The possibilities for automation of productive processes are particularly favorable in power stations, and in the machinery manufacturing, chemical, petroleum and food industries. It will be the duty of the machine builders to meet the objectives posed by the 21st congress of the CPSU with respect to combined mechanization and automation of production processes to create, during the upcoming 7-year plan, equipment that will guarantee highly efficient means of mechanization and automation to our economy.

When speaking of improvement of the tools of labor, it is important to emphasize the need to perfect the equipment of agriculture. Agriculture possesses particularly great possibilities for the mechanization of the processes of production, and the percentage of manual labor therein is still quite considerable. During the upcoming 7-year plan, the forces of production in agriculture are to witness a mighty leap forward. This demands that socialist industry develop the equipment required for mechanization of agriculture and of those aspects of farm labor that continue to require the services of great numbers of people, such as loading and unloading, and some others. The equipment used in processing also stands in need of fundamental improvement.

The upbuilding of communism presupposes a tremendous expansion of the supply of power available to society. As long ago as the beginning of our revolution, V. I. Lenin offered a remarkable formula: "Communism is Soviet power plus the electrification of the entire period." This formula is significant in a dual sense. On the one hand, it indicates that Soviet power, socialist democracy, is a political organization of society that contains everything necessary for the creation of a communist society. By developing the forces of production and creating the foundation for communism in material technology, the Soviet government carries out its role in world history. It will die out only when it has built communism. On the other hand, and for us this is particularly important, Lenin did not conceive of the material and technological foundation of communism without electrification of the entire country, both of industry and agriculture, without the conversion of the basic branches of production to electric power, and likewise, of the servicing of the everyday needs of the people. As we know, a grandiose program of building electric power plants will be carried out during the 7-year plan. However, this will not yet give us all that we need to create the foundation for communism in material technology. We will need a number of years beyond that for this objective to be met.

Finally, the development and improvement of the tools of labor during the period of all-out upbuilding of communism presupposes the creation of new branches of industry, without which one cannot conceive of the foundation of communism in material technology. The chemical industry and all its branches will play an ever increasing role in production, the farther we progress. Chemistry will produce new materials whose qualities will be superior to the metals, minerals, fibers and other products found in nature and necessary to industry today. The chemical industry is playing an ever-increasing role in raising harvest yields, in improving livestock productivity and in developing the power supply of the country.

The June Plenum of the CC CPSU, in its resolution on the functioning of party and Soviet organizations and the economic councils with respect to fulfillment of the decisions of the 21st congress of the CPSU regarding acceleration of technological progress in industry and construction and in its appeal to the working men and women and collective farmers and farm women, to the Soviet intellectuals and to all the working people of the Soviet Union, has summarized the results of the successful carrying out of the objectives of the first year of the 7-year plan and sketched out specific measures for the fulfillment and overfulfillment of the 7-year plan. The Plenum of the CC CPSU directed particular attention to reinforcing the struggle for technological progress in the national economy as the decisive condition for successful fulfillment of the 7-year plan, and for all-round mechanization and automation of production, for increasing the role of science in the development of production, for further specialization and subcontracting in the national economy and, finally, for the reconstruction, expansion, and technical re-equipment of enterprises currently in operation.

In its historical decisions, the Plenum spelled out in detail the objectives of the 7-year plan, and revealed the incalculable resources hidden in the Soviet economy, and also pointed the path to the most rapid carrying out of the 7-year plan. The decisions of the June Plenum will arm the Soviet people with a new and powerful weapon in the struggle for the most rapid development of socialist industry, transportation and construction on the basis of the latest achievements of science and engineering. Technological progress, all-round mechanization and the automation of production will vastly facilitate the further increase in the productivity of labor, which is the decisive condition for the final triumph of communism.

Perfection of the tools of labor constitutes the most important element in the development of the foundations for communism and material technology. The status of industry, transportation, construction, and the material and technological equipment of agriculture, the technological level and degree of improvement of all this material foundation, and the scale thereof, will determine the level of development of the productive forces.

We know that the development of the foundation for communism in material technology, which would exceed the material and technological basis of capitalism quantitatively and qualitatively, is a job that will take more than one 7-year plan to accomplish. As Comrade N. S. Khrushchev observed in his report to the 21st congress of the CPSU, about 5 additional years will be required after the fulfillment of the 7-year plan before the USSR will be able, in the decisive economic competition with the most advanced capitalist country, the USA, to win first place in the world in level of production per head of population. But it will even then be premature to speak of the completion of the creation of the foundation for communism in material technology. It is necessary to overtake the capitalist countries and leave them behind, and to assure a volume of industrial and agricultural production that would create an abundance of social wealth and permit society to progress from the socialist principl of "to each according to his work" to the communist princ ple of "to each according to his needs." The changes occurring in the material and technological foundations of society in the forthcoming 7-year plan will constitute a de cisive step in the preparation of the foundations for comm nism in material technology.

The development of the productive forces is not limited to changes in the tools of labor. One of the indices of a high level of the productive forces is the accumulation of raw materials, auxiliary materials and other means of pr duction without which people and their tools cannot operat in the production process. During the epoch of all-out upbuilding of communism, there will be a sharp upswing i the production of both ferrous and nonferrous metals. Reserve supplies of metal are needed to enable the machi ery manufacturing industry, which creates new tools of labor and consumer goods, to work without interruption. The development of the chemical industry will require enormous quantities of petroleum, its byproducts, and gas as raw materials. Petroleum and gas are fuel for factori mills and power plants, and at the same time constitute a valuable raw material for the chemical industry. The pro duction of all these raw materials and of auxiliary materi will undergo a pronounced increase during the present 7-year plan.

Human beings are the other component of the productive forces. The percentage of persons participating directly in the creation of material goods will rise in the process the upbuilding of communism. The triumph of socialism and the elimination of the exploiting classes has converte the members of society into active workers for socialism. However, during its early stages, socialist society has ha to apply enormous efforts to create its own intelligentsia, a portion of which has not directly participated in the production of material goods. The working class, on its acce sion to power, did not have its own intelligentsia, and without one it was impossible to govern production and the state, and to raise the cultural level of the people. It pro necessary to develop this intelligentsia from the working people and the peasantry over the entire course of the tra sition from capitalism to socialism. The high schools an higher education subordinated their work to this problem to a considerable degree. Only a portion of the graduates of the high schools went directly into production. A consi erable proportion of the young people went into production jobs without having had even a 7-year education.

Now, when the problem has arisen of all-out upbuilding of communism, the entire system of public education has be aimed at the training of working people for a communi society, people with an all-round development, skilled and educated, capable immediately after completing their 8-ye schooling and, to an even greater degree, after completing complete secondary education, of going on to and doing a job. This will not only sharply improve the training of pe sonnel for the country, but will increase the percentage of working people directly participating in the creation of material goods.

The intelligentsia as a social grouping will not diminish in numbers but will, on the contrary, increase. However, the percentage thereof not engaged in the process of creat ing material and spiritual goods will diminish. On the one hand, the managerial apparatus will sharply decrease, an the farther we go the farther this will proceed. On the ot hand, as the foundations of society in material technology grow, there will be an increase in the share of the enginee ing and manufacturing intelligentsia directly participating in the production of material goods. Representatives of s specific a branch of mental labor as science will take an ever more active part in the process of material production. For, it is not only the foreman, the engineer, and the shop superintendent who engage in production, but the scientific personnel of the most various industrial laboratories and even of research institutes who, at today's level of technology, become an essential element in the production process. They perform a continuous analysis of all stages in the production process, develop new procedures and introduce them into production, plan new equipment and monitor its operation. The same holds for agricultural production, in which agriculturists, veterinary physicians, mechanics, zootechnicians, etc., participate as most direct participants in the process of creating material goods.

Hitherto, we have spoken of the quantitative aspect of the matter, having in mind the process of expansion of the category of persons directly engaged in the creation of material values. The qualitative aspect of the matter is no less important. The process of all-round development of man will proceed at the most rapid rate in the period of all-out communist upbuilding. Production workers create not only material values but systematically elevate their own general educational level and their level of culture. They go on to complete secondary, and many of them to complete higher education. The cultural needs of the working people of socialist society rise, new socialist relationships in human life acquire broader and broader dissemination. The all-sided man of the future communist society is being shaped today. This circumstance is of the most colossal significance to the further increase in the productivity of labor. People who are developed in all respects, people who take a statesmanlike attitude toward their labor and toward technology, will reveal new sources and new possibilities for the most rapid increase in the productivity of labor.

Indicative in this connection is the movement for the title of communist labor brigades that has developed recently. What is the essence of this movement? What are the characteristics of the communist labor brigades? In the first place the fact that their participants display labor of the highest productivity. V. I. Lenin stated more than once that, in the last analysis, the productivity of labor is the most important factor in the success of the new social order. Communism will ultimately triumph when, Lenin emphasized, it creates a new labor productivity, higher than that of capitalism. The communist brigades are providing examples of a higher labor productivity, not by exhausting their organisms, not by an overextension of their physical and mental capacities, but by better organization of their labor, by complete utilization of equipment, by socialist and mutual aid to each other, by improvement and perfection of technology.

Both the increase in the proportion of persons in society directly engaged in the process of creation of material goods, and the qualitative changes in people themselves during the period of all-out upbuilding of communism constitute a powerful stimulus to rapid development of the productive forces and to increase in the productivity of labor. This in turn creates the prerequisites making for an increase in the free time available to all working people and thus develops conditions favorable to their spiritual development, to the all-round development of the chief productive force in society—man.

The 7-year plan for the development of the national economy of the USSR envisages a further rise in the people's living standard. One of the indices in the rise in living standard, of improvement in conditions of labor, and creation of possibilities of all-round spiritual development of the working people is the reduction in the work day. As we know, transition to the 7-hour working day for all working people and office workers will be completed in 1960, and this will lay the groundwork for transition to a 5- or 6-hour working day in the years that follow. All this taken together will make for the all-round development of the human personality under the conditions of the all-out upbuilding of communism. This will serve to create a further incentive for all of society and for each working person individually to increase the productivity of labor to a maximum, and to make the fullest utilization of all the capacities of man. The elevation of the living standard of the people and the reduction of the working day are beyond question a new and important stimulus to the development of the socialist forces of production.

These are the fundamental directions in which the development of the productive forces are progressing under the conditions of the all-out upbuilding of communism.

Now let us see what changes are occurring in the system of production relationships. As has already been stated, the relationship between human beings and the means of production represent the basis of the relationships of production. In socialist society, social ownership of the means of production has undivided sway. It takes the form either of government, or in other words, public, or of cooperative-and-collective farm property. The epoch of the all-out upbuilding of communism is characterized by the further development and perfection of both forms of social property.

As far as public property is concerned, its development is conditioned by the mighty rise in socialist industry, the output of which will virtually double in the coming seven years, as we know. In agriculture, the development of public property pertains primarily to the expansion of the state farms which today yield about 40% of the country's total grain crop. The share of general public property in the national economy will rise still higher by the end of the 7-year period.

At the same time, cooperative-and-collective farm property will also grow stronger and develop. The collective farm has demonstrated its viability. However, all the possibilities slumbering therein and capable of stimulating the development of the productive forces of the collective farm countryside, of increasing the productivity of labor, and of raising the yield of grain crops and the productivity of stock farming, have not yet been revealed. Today, when all the factors of production are concentrated in the collective farm, all the conditions have been created to enable the forces of production there too to increase very rapidly.

The development of cooperative-and-collective farm property under the conditions of all-out upbuilding of communism presuppose its gradual merger with general public property. This approximation of the two forms of social property will follow the following major directions: in the first place, there will be a rapid increase in the indivisible funds of the collective farms, which constitute the foundation of collective farm property. Under these conditions, as the experience of the upbuilding of communism testifies, the increase in the indivisible fund will proceed particularly intensively in the field of accumulation of modern tools of labor: tractors, harvester combines, cultivators and harvesting machines, etc. In the second place, livestock farming on the collective farms is improving rapidly. In the third place, the construction of production enterprises, restaurants, clubs and the like is expanding. Fourth and last, an accumulation of circulating financial funds is occurring, without which it is impossible for a modern large socialist economy to undergo normal development. In terms of its role in the system of social relationships, the indivisible fund of the collective farms differs little from general public property. There can be no doubt that the further development and reinforcement of the indivisible funds will constitute a most important contribution to the transformation of cooperative-and-collective farm property into the general public property of the communist society of the future.

The approximation of the two forms of social property presupposes the involvement of the forces and means of the collective farmers into serving the needs not only of the collective farmers themselves but of the rest of the population, jointly with government-owned enterprises. As the collective farms grow richer, they invest their funds into the building of bridges and roads within their rayons, in the construction of inter-collective power plants, schools, hospitals, radio relay lines and rebroadcasting centers in the oblasts where television has already been provided. All this is testimony to the fact that collective farm property is participating to an ever-increasing degree in serving the needs of all the working people, or in other words, is playing the same role as does general public property. There can be no doubt that the construction of new enterprises and cultural institutions will further expand hereafter on the basis of joint utilization of the funds of the government and of the cooperatives and collective farms. Finally, the progress of collective farm production and the increase in the income derived therefrom will progressively render it unprofitable for the collective farmer to maintain his own private business on his plot. Even today, there are hundreds of collective farms in which the collective farmers prefer to turn over their cattle to the collective as a whole, because the public business provides them with all the necessary livestock products. The time will come when even the collective farmer's garden becomes a burden, and when he will be able to get all the vegetables he needs from the collective farm, and more. There will simply be no purpose to busy himself in his own subsidiary enterprise.

These are the primary trends along which the approximation of cooperative-and-collective farm property and general public property is proceeding.

In connection with the continued existence of cooperative-and-collective farm property, as well as with the social division of labor, commodity production will continue to exist and to play an important role in the all-out upbuilding of communism. The period of all-out upbuilding of communist society does not yet presuppose the ending of commodity production. The upsurge of collective farm production will doubtless mean an increase of marketed production and the expansion of commodity-and-monetary relationships in the village and in the country at large. This development of commodity-and-monetary relationships does not contradict the accelerated upbuilding of communism, because commodity production in the USSR is production of a special type that does not involve relationships with exploitation. Its development leads to the reinforcement of social property, to stimulation in production and consequently plays a positive role in the upbuilding of a communist society.

An important characteristic of production relationships in the present stage of development is the fact that substantial differences between town and country, between mental and physical labor, between skilled and unskilled labor, between light and heavy labor continue to exist. The period of the all-out upbuilding of communism and even the 7-year plan immediately ahead of us will be of considerable significance in eliminating the differences. The reinforcement of the equipment available to agriculture and the progressive approximation of the two forms of social property, the elevation of the cultural level of the countryside will further narrow the gap between town and country, will lead to an even more rapid elision of the substantial differences that continue to exist between town and country and betwee mental and physical labor. The characteristics inherited from a previous epoch typifying the old social division of labor are ever increasingly being erased. During the period of all-out upbuilding of communism these characte istics will not yet completely disappear, but the fundamen portion of the job of overcoming them will have been performed.

The social groups working in collaboration with each other—workers, collective farmers, intellectuals—are con ing closer and closer together. To the degree that agricu tural labor becomes a variety of industrial labor, and the significant differences between mental and physical labor are erased, the rounded man of communist society is shaped from persons in all strata of the population—worke peasants and intellectuals. Social groupings become more and more closely allied, the unity of the Soviet people progresses and becomes stronger, and the soil is prepared for the transformation of all members of society into acti and conscious workers of a communist society.

Simultaneously, the peoples and nationalities of the Sovie Union are coming closer and closer to each other. The dialectics of historical development is such that the flouri ing of national culture under the conditions of a triumph o socialism tends even more strongly to cement and to deepen the single, socialist content of these cultures. The life together, the firm economic ties of the peoples of the Soviet Union, the common nature of their political ideals a the mutual aid they extend to each other in the upbuilding of a communist society will bring the peoples of the Soviet Union more closely together, and will facilitate the develo ment of common characteristics and a common culture. The development of socialist society has attained a stage which one can speak with full justification of a unified mul national Soviet people linked by indissoluble bonds of frien ship and collaboration. Thus, a dual process is occurring characterized on the one hand by the development of nation cultures and on the other by the ever more rapid merging. This process will be able to come to its conclusion only under the conditions of the triumph of a communist society throughout the world as a whole.

The period of all-out upbuilding of communism presuppo a gradual rise in the elements, the granules, the earliest traces of the future communist society in the sphere of relationships of production. In the period of all-out upbuil ing of communism, all the economic laws of socialism wil continue to function, and specifically, the principle of distr bution in accordance with labor performed, its quality and quantity. Consistent adherence to this principle is a most important condition for accelerating the development of society toward communism. However, even under socialism, elements readying the gradual transition of society to the communist principle of distribution are taking shape a becoming ever firmer.

Even today, measures in the field of public health, medic service, social assistance, education of children and young people, and, to a considerable degree, cultural services, are carried out not according to the socialist principle ("to each according to his work") but free of charge. N. S. Khrushchev has stated in this connection: "Ours is a truly communist road toward increasing the well-being of the working people, and toward creating better living conditions for society as a whole and for every human being therein. This includes the provision of good housing, the organization of public catering, improvement in the servic industries, expansion in the network of children's institutio improvement of the educational system, organization of recreation and improvement of medical services to the population, the building of cultural institutions, etc." As the building of communism in our country progresses, all these elements of communist organization will increase and expand and develop toward a full communism.

An important feature of the socialist relationships of production is represented by the intimate economic collaboration among the socialist countries. This collaboration is dictated not by a temporary coming together of various factors, but by the nature of socialist relationships.

Even in capitalist society, the development of productive forces, and the manifestation of the social character of production, results, at a given stage of development, in the formation of a world capitalist economic system, and in the transformation of the individual capitalist countries into links in this system. The development of economic ties among the individual capitalist countries and the appearance of an international division of labor is beyond doubt a progressive phenomenon. However, it is realized only in antagonistic forms pregnant with reinforcement of the inequalities in the economic development of the various countries, the enslavement of the underdeveloped countries by the imperialist powers.

The socialist mode of production, under which the social nature of production corresponds to social ownership of the means of production, is acquiring a world character to even a greater degree than the capitalist system. However, here the antagonisms characteristic of the capitalist world no longer exist. In place of the law of uneven economic and political development of capitalism in the epoch of imperialism, the law of planned and proportioned development of production governs in the world socialist system. The intimate collaboration of the socialist countries makes for a harmonious development of the entire socialist camp, and this assists the countries having a lower level of production to raise themselves to the level of the more advanced. Whereas unevenness of economic development is inherent in capitalism, equalization of the levels of economic development is characteristic of socialism and assures all the socialist countries of an approximately simultaneous transition to communism.

The collaboration among the socialist countries is consequently a necessity, a law of the development of the socialist countries. At a given stage, when a completely communist society has developed, this collaboration will be transformed into a merger of all the lands of socialism into a single organized economy governed in accordance with the principles of democratic centralism. Only a nationalist is capable of thinking that any single socialist country should build socialism independently of the other socialist countries and so proceed to communism. Leninism proceeds from the concept that as ever increasing numbers of countries drop out of the capitalist world a new world, a world of socialism, presupposing mutual relationships and intimate collaboration among peoples liberated from exploitation, will expand and grow stronger.

Today, all the lands of the socialist camp are closely collaborating with each other in the development of their economies and cultures. The coordination and mutual agreement on plans for economic upbuilding has become a law of the development of all the lands in the socialist camp. Economic collaboration among the socialist countries is characterized by a figure such as the following. In the year just past, 1958, the foreign trade of the lands participating in the Council on Mutual Economic Assistance was 150% greater than in 1950. As early as 1957, the needs of these lands for imports of machinery, equipment, fuel, pig iron and fertilizer were covered approximately 75% by exchange of commodities within the socialist camp. The present stage in the economic development of the socialist lands is characterized by the fact that trade agreements are now being concluded not for a single year but for a long period so as to make it easier for all the socialist countries to plan the development of their economies in the most intelligent fashion possible.

The economic collaboration of the socialist countries is proceeding along the lines of an ever closer linkage and coordination of the plans for the development of their economy. In connection with the fact that all the countries of the socialist camp are devloping long-range plans for the next 10 to 15 years, the possibility is being created for coordination of the plans of economic development over long periods. The intimate collaboration of the socialist countries makes possible the most purposeful realization of a new international division of labor in the socialist camp calculated to accelerate the rates of their development. The international division of labor among the socialist countries that is now coming into being finds its clearest expression in specialization and the subcontracting of production connected therewith. We know, for example, that the coal industry of Poland is being developed with a view to the needs of the German Democratic Republic and of Czechoslovakia. The Hungarian aluminum industry and the petroleum industry of the Soviet Union are expanding with an eye to the needs of the other countries of the socialist camp. The economies of the socialist countries, to which anarchy of production and economic crises are unknown, are developing on the basis of close collaboration and providing a new and powerful stimulus to the growth of the productive forces of socialist society.

These are the most important features of the development of socialist relationships of production during the present stage of the upbuilding of communism. The changes occurring in the productive forces and the relationships of production in socialist society are strengthening and perfecting the correspondence between the relationships of production and the nature of the productive forces, and are thus opening broad perspectives for their further flourishing.

This explains the high rates of development of production in the USSR and the lands of people's democracy which make it possible for socialist society to win the competition with the capitalist world. The rapid rates of development of the economy of the Soviet Union are wholly determined by the superiority of the Soviet socialist economic system, by the mighty material and technological foundation already developed, and by the remarkable qualities of Soviet people, based upon modern achievements in science and engineering. It is understood that socialist society must conduct its economy in an economic, logical, and zealous fashion. The level of development of the productive forces already achieved permits us, while giving first priority to the development of heavy industry, rapidly to develop other branches of the national economy as well. Socialist society is also capable of providing the necessary rates of growth of heavy industry, a more harmonious and well-proportioned development of all the branches of socialist production and a rapid upsurge in living standard, while carrying out a gradual transition to communist society.

It will be understood that we cannot forget the existence of the capitalist world and the efforts of the hostile and aggressive imperialist powers which strive to interfere with the upbuilding of communism. Soviet people are not indifferent to the length of time that it will take for socialism to win in the competition with the world of capitalism. Nor is this a matter of no importance to the working people of the entire world. The more rapidly the USSR overtakes the capitalist countries economically, the more obvious will be the advantages of socialism to all, even the most backward working people of the capitalist countries, the more rapidly they will be convinced of the desirability of a transition to socialism, and the more quickly they will liberate themselves from exploitation and oppression by capitalism. Therefore, in developing the socialist productive forces and in defining the most practical distribution of the funds invested in production, we cannot leave these factors out of consideration.

For example, during the present 7-year plan the USSR will give preference to the construction of thermal electric power plants rather than hydroelectric power plants, although the latter will also be built. In the majority of cases, thermal power plants go into operation more rapidly, and consequently, the funds invested therein are recouped more quickly. This makes possible a more rapid rate of increase in the power facilities of the Soviet Union and a quicker victory in the competition with the USA. This gain will be important in the history of the world in the respect that it will lead to a narrowing of the possibilities for new military adventures on the part of the imperialists, will compel them to refrain from solving moot questions from positions of strength and will make it possible for mankind to free itself from the enormous burden of military expenditures. And this will open yet another important source for the accelerated development of the forces of production.

The interrelationship between the forces of production and the relations of production under the conditions of the all-out upbuilding of communism bears witness to the fact that the correspondence of the production relations to the productive forces will become ever more harmonious under these conditions. The Communist Party and the Soviet people, basing themselves upon this most important law of social and historical development, have undertaken realization of the 7-year plan for the development of the national economy with enthusiasm. Fulfillment of the 7-year plan will reveal new and even broader perspectives for the further development of the productive forces and accelerated advancement of communism.

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A. Khreinin:

Problems of Price Formation in Transport

A. P. Abramov, A. G. Zakharov, and G. V. Kotov, Costs of Railway Haulage and Freight Tariffs.

Transactions of the All-Union Railway Research Institute, Number 134, Railway Press, 1957, 180 pages.

S. F. Kuchurin, Soviet Railway Charges. A Text for Railway Colleges, Railway Press, 1957, 164 pages.

The Soviet government has, at all stages of the upbuilding of socialism, made successful employment of such economic categories as cost and price, including transport charges, for the purpose of conserving outlays of the labor of society. At the present time, when the Soviet people are proceeding to carry out the grandiose program for the upbuilding of communism outlined by the Twenty-first Congress of the CPSU, the significance of these categories will become even greater.

Railway tariffs are planned prices for transportation founded upon the labor socially necessary for this purpose, or, in other words, the costs of transport. The point of departure in determining railway freight rates is the average cost, in the industry as a whole, of a unit of transport service. In order to construct such rates it is necessary to know the average cost of haulage not only in general, but for particular types of freights. In 1958, cost represented 73%, on the average, of the price of production of transport (freight rates). It was an even higher percentage with regard to certain types of freights: 87% for coal and ore, 96% for timber, etc. Thus, the level of freight rates in general and in particular is considerably dependent upon the cost of production. In the course of carrying out a policy of systematic reduction of prices, the level of transportation costs is of major significance, because the scale of accumulation, as determined in the establishment of railway freight rates, should be adequate to assure expanded reproduction of railway transport.

With the object of utilizing cost as the basis for determining rates to be charged for railway freight tariffs, Soviet economists have conducted large-scale studies to determine methods of calculating the costs of transportation of various types of freights. The book, Costs of Railway Haulage and Freight Tariffs, by A. P. Abramov, A. G. Zakharov, and G. V. Kotov, falls into this category of studies.

As indicated in the preface, the volume concerns itself not only with further refinement of the method of calculating freight costs for rate-setting purposes, but with problems of developing rates for haulage of freights in various types of cars and under various types of organization of railway haulage.

The first three chapters of the book are devoted to the bases for determining transport costs for rate-setting purposes.

The difference between the calculation of the costs of production in transportation and in industry is the following. In the first place, the process of producing transport is not limited to the territory of an industrial enterprise. As much as 90% of all transport production — haulage — is carried out over the lines of more than one railway and only 10% is carried on within the bounds of a single railway. This creates the need to determine the average cost of production for the railway system as a whole. In the second place, expenditures upon raw materials in industry are calculated, for cost determination purposes, with respect to some particular type of production. The absence of raw materials in the means of production of the transport industry increases the share of indirect expenditures distributed among the various types of products in proportion to specific standards. To calculate the cost of haulage on the railways, expenditures are arbitrarily divided into those which are, and those which are not, dependent upon the scale of movement. Whereas expenditures dependent upon the scale of movement grow in approximate proportion to the scale of movement, expenditures not dependent upon movement remain constant unless fundamental changes are in process in the equipment available to the railways. Calculations of the costs of haulage for rate-setting purposes should create conditions for determining the expenditures involved in initiating and terminal operations at the stations of origin and destination (commercial operations in making out the waybills, the receipt, release and weighing of freights, shunting operations to bring cars to loading and unloading points, to make up and break up trains at the stations of origin and destination, operations having to do with the maintenance and servicing of shunting equipment, cars, technical devices, etc.), and other expenditures not dependent upon movement. The purpose of all this is to determine changes in cost due to length of haul.

The authors arrive at the conclusion that for rate-setting purposes, the costs of transport should be determined for the various elements comprising the technological process of operation of the railroads. The scheme employed to distribute expenditures in terms of the operations constituting the process of transportation is set forth in Chapter Two and consists of the following.

All railway operating expenditures are classified as passenger or freight movement costs on the basis of the methods of calculation now employed (with some corrections). Freight movement expenditures are then broken down into the expenditures to be made good by base rates and those to be made good by added charges for additional operations. This is particularly important for purposes of comparing costs with actual freight rates. Further, the expenditures reimbursed out of base rates are broken down into station expenditures and expenditures on the road. Station expenditures are, in turn, broken down into expenditures on the point-of-origin and point-of-destination operations and on operations with through cars. Expenditures on the road are classified on the basis of haulage by trains in different categories: through, made-up, transfer, and export.

At the end of Chapter Two, page 45, interesting data are presented on the results of these calculations. Thus, in 1956, the share of expenditures accounted for by passenger movement came to 20.6%, and for freight movement — 79.4%, in the total sum of operating expenditures. Expenditures on freight movement broke down further as follows: station operations 20.1% (of which 12.5% was on origin and terminal operations, and .05% on other loading operations; 15.1% on operations with through cars), whereas costs while in movement on the road came to 71.9% of the total expenditures on freight movement.

The third chapter presents the method for determining the cost of movement of carload freights on the basis of which a simple formula is arrived at after numerous complex calculations. According to this formula, which employs numerical values presented in the volume, one may determine the cost of transporting a specific freight under the conditions of 1956.

This formula looks as follows: $C_f = \frac{a}{l_f} + b$, where capital C_f is the cost per ton-kilometer, a represents the fixed costs per ton of the specific freight, l_f is the distance the freight is to be hauled in kilometers, and b is the portion of the expenditures in hauling freight one ton-kilometer that varies with the length of haul.

For determination of costs in future years, the authors recommend that the cost obtained by this formula be corrected by a percentage representing the reduction in cost over the entire railway system on the average during the period for which plans are made.

Of interest are the data presented on the average weighted cost of haulage of eighty-three specific freights (pages 67-68). As we see from these data, the lowest average cost of haulage (in the range of two to three kopecks per ton-kilometer) is that of bulk freights, such as coal, ore, ferrous metals, mine timbers, cement, refractories, non-ferrous metals, and salt, whereas the highest cost is for furniture (10,570 kopecks), unginned cotton (11,012 kopecks) and charcoal (9,451 kopecks).

The foregoing are average data and are determined on the basis of the percentage of haulage occurring in various distance categories. Were the cost calculated for various distances, the range of fluctuation of haulage costs among various types of freight would be considerably greater than the average.

The authors note that the method employed to calculate the cost of haulage is comparatively complex and demands further refinement and simplification. They suggest that systems of reporting be adapted to the purposes of analysis of expenditures for the individual elements comprising the turn-around of cars. In our opinion, improvement of this method should follow the procedure of calculating the costs of hauling specific freights and of allowing for the particular factors influencing the magnitude thereof. The latter should include, primarily, the geographic distribution of haulage of individual freights. The cost of haulage of certain railroads fluctuates widely because of difference in equipment and volume of traffic (from 1.4 kopecks on the Omsk Railway to six kopecks on the Far Eastern and the Moldavian Railways in 1958). In calculating the cost of hauling a specific freight it is necessary to take into consideration the share of that haul to be performed over each particular railroad. In other words, it is necessary to find a mean haulage cost for the railway system as a whole that will allow for the influence, upon this cost, of haulage over the roads on which this particular freight is most frequently moved. Haulage of certain bulk commodities (for example, pyrite, manganese ore, combustible shales, sugar beet, etc.) is carried out chiefly within the bounds of certai particular railways. Consideration of this factor, for these freights, may yield a significant deviation from the cost as determined on the basis of an average for the railway network as a whole. We proceed from the concept that if a freight is moved over a limited portion of the network, that is, within the limits of a single railway, or of several, expenditures on haulage calculated for these roads acquire the nature not of individual, but of socially necessary expenditures.

The seasonal nature of haulage of certain freights also have to be taken into consideration. On the one hand, this leads to a certain reduction in the cost of haulage, as the haulage of seasonal freights is performed during a given period of the year, and moreover, in great bulk, permitting maximum mechanization of loading — and unloading — operations, and reduction in time lost by rolling stock stan still during originating and terminating operations, and also makes it possible to ship these freights along definite routes determined by the shipper or by transport considerations. On the other hand, the seasonal nature of the haulage of a number of freights gives rise to an increase in cost of haulage related to the need for special repairs to freight cars, and for the maintenance of reserve cars.

The method under discussion also does not make provisi for certain specific peculiarities of some freights. For example, food and industrial commodities hauled in the packaged form often require preliminary storage in warehouses belonging to the railways. In determining the cost of the transportation of acids, determination must be made of whether they eat away the metal of the tank cars, and therefore whether costs of car amortization have to be set higher than in calculating the costs of hauling other freights It is also necessary to take into consideration the special conditions for hauling flammable and dangerous freights. For example, in determining the cost of hauling perfumes and matches, consideration must be given to the additional originating and terminal operations (such as special care taken in loading, in shunting, etc.). The fourth chapter compares the rates of costs of hauling carload lots. In so doing the tariffs are calculated in terms of the freights employed to set the cost, or in other words, they are presented in comparable form.

The authors contend that the present tariffs for the majority of freights are adequate to provide operation at a profit. Moreover, whereas the haulage of certain bulk freights such as coal, iron ore, timber, and casting sand was performed at a loss for a long time, as of 1956 they have started to yield a profit. The work under review notes correctly that "this bears witness to the high rates of reduction in cost of haulage on Soviet railway transport" (page 56). However, freight such as coke, bricks, stone, sand, earth, clay and mineral fertilizers are hauled as tariffs that are lower than the actual cost of haulage. The same is true of short hauls of furniture, macaroni, shoes and wool (page 76).

In the fifth chapter, the authors, investigating the costs of haulage and the tariffs now in effect for hauling freights in cars of different capacities, conclude that there are certain freights (for example, coke, flax) for which the cost of haulage in large-capacity cars is greater than i two-axle cars. This is explained by the fact that the basis for differential car rates in the present system is the outmoded eighteen-ton-capacity car, and also by the fact that the standard calculating loads do not accord with the nature of change in the technological standards and the actual loads carried in accordance with the capacities of the cars

The authors write, "In all situations, the general tariff level for one ton of a specific freight over a specific distance should be uniform regardless of the equipment available to particular divisions and sections of line and the special operating conditions characteristic of them, or of the type of rolling stock used for haulage" (page 96). However, we cannot deem this conclusion to be valid for all situations. For example, in setting reduced tariffs for deadheading (something that the authors discuss themselves on page 12), it is necessary to proceed from the individual costs of hauling freights on the specific line.

The study suggests a number of variants for improving rates for the haulage of freights in cars of different types and capacities. They include: 1) establishment of tonnage rates; 2) differentiation of carload rates based on utilization of the tonnage of particular freights that a car can handle; 3) retention of the principle of carload rates only for the primary bulk freights and utilization of fixed tonnage rates for the other freights. In this connection, the authors note that "differentiation of carload tariffs should preferably be performed on the basis of the technological standards for individual carloading" (page 98). At the same time, we find on page 74 the recommendation that tariff rates be calculated on the basis of the actual loadings of cars for purposes of analysis and comparison of tariffs and costs. Thus, whereas the real loads carried per car are suggested as the basis for analysis of carload rates, the setting of carload rates (on the basis of which the analysis is performed) is, it is suggested, to be done on the basis of the technical loading standards. This conclusion is not precise, as commonly one level of tariffs is established for an entire class of freights (homogeneous in terms of conditions and costs of transportation), and technical standards are, as a rule, not even established for the classes. It is also necessary to bear in mind that the establishment of carload rates on the basis of technical standards would result in complicating the rates and increasing the number of tariff schedules (this is recognized by the authors themselves).

With respect to the method suggested for establishing tonnage rates, this method, too, is, in our opinion, impractical. It would result in a considerable reduction in the influence exercised by tariffs upon the utilization of cars, as tonnage rates making no provision for the level of utilization of capacities would cause shippers to give little consideration to this problem if they pay an identical rate per ton. Furthermore, it must be borne in mind that in 1958 the average capacity of a freight car was utilized only 84.2%. Therefore, a further improvement in the incentive provided by the tariff themselves to employ the full tonnage capacity is required.

The establishment of carload tariffs for the bulk commodities, and tonnage tariffs for the others, would mean returning to the tariff system of 1930, which was ultimately abandoned for the reasons indicated above.

The sixth chapter, in which the authors investigate tariffs and costs of high-speed freight haulage, is of interest. An investigation of this kind may be utilized in studying not only problems of price formation in transport but problems having to do with the efficiency of introduction of new equipment into railway transport: trains with refrigerator cars for hauling perishables. Comrades Abramov, Zakharov and Kotov have performed detailed calculations of the cost of haulage in trains with mechanical refrigeration and have revealed the existence of shortcomings in their utilization. According to the authors' calculations, the cost of haulage in mechanically-refrigerated trains is 20% to 25% higher than in iced refrigerator cars. However, as the length of deadhead runs of these cars is reduced in the future, along with an increase in their movement to the level set in the plans, and improvement in the utilization of their capacity, it will be possible substantially to reduce the cost of haulage in mechanically-refrigerated trains.

The seventh and eighth chapters are devoted to analysis and comparison of rates and costs for hauling less-than-carload and container lots. The authors come to the conclusion that, in the first place, certain carload tariffs now in effect are lower than less-than-carload lots and, secondly, that to build a tariff on the haulage of less-than-carload lots does not correspond to changes occurring in the cost of less-than-carload lots depending upon the type of freight, the size of an individual shipment, and the distance involved.

With the object of improving the tariffs for container haulage, the book suggests the establishment of differential tariffs for hauling flatcars completely loaded with containers, or individual containers, based on repaying all the expenditures involved in the utilization of containers.

As may be seen from the foregoing, the book examines a large range of questions involved in price formation for transport. It will be of help in the further improvement of price formation on the railways.

S. F. Kuchurin's book, titled USSR Railway Tariffs, presents the general theory of railway tariffs, problems of development of the tariff system on Soviet railways, methods of establishing railway freight rates, the structure of the present tariff system, and tariff handbooks and the rules for their use. The book is organized into nine chapters. In the first chapter, Tariffs in Capitalist and Socialist Transport, the author defines a tariff. He writes that tariffs are the price of haulage, or in other words the monetary expression of the value created by abstract labor rendered concrete in the means of production employed in transportation, and the living labor of the workers occupied in the transport industry. Further, Comrade Kuchurin emphasizes the operation of economic laws characteristic of a given social order. He shows that, in capitalist transport, value is the foundation for price in the production of railway services and is the regulator of this production. In socialist transport, the average cost of production of this product over the industry as a whole is taken as the basis for the planning of tariffs.

The author poses the problem of the relation that should exist in the price between cost and net profit (accumulation). He writes, "The desirable ratio between cost and the level of accumulations in the price for a given type of product is established not for each such type in isolation, but simultaneously for all types of production in the given production complex" (page 13). Further, he notes that this system of prices must, as a whole, stimulate the fulfillment of production plans and the economical utilization of raw and other materials, etc. In describing transport tariffs, the author emphasizes that they are established on the basis of the same principles as the planned prices for industrial production.

Thus, S. F. Kuchurin, in examining wholesale prices and tariffs, bypasses the question of the scale of net profits that should be returned by the price (tariff) in industry or in transport. However, those elements of social expenditures to be covered by net profit in transport should certainly be covered in a textbook.

The basis of differentiation of tariffs in terms of types of freight, distances, and speeds of delivery, as well as categories of shipment, (carload lot, less-than-carload, and container) types of cars, and their capacities, is the cost of transportation and changes therein in accordance with these factors. Comrade Kuchurin writes that "differentiation of railway freight tariffs in the USSR is induced not only by differences in specific costs of hauling particular freights, but by the conscious and rational establishment of differentiation between the transport price in the tariff, and the cost and value as established by a planning government..." (page 15). But the author does not demonstrate the nature of this rational differentiation and its limits.

The second chapter is devoted to a development of tariff policy on the Soviet railways. It characterizes the tariff reforms that have been carried out during the Soviet years.

The author presents examples to show that, during the period of restoration of the economy, the tariff rates facilitated the development of heavy industry. However, not all of his examples are well chosen. Thus, the book notes that the tariffs for coal, ferrous metals, ores and mineral building materials were set at less than the average tariff rate for the entire system. At the same time, the tariffs for sugar and textiles were set higher than the average. However, if we examine the final figures for 1956, we find that the rates for coal, ferrous metals, ores, and mineral building materials are also below the average for the system, and those for sugar and textiles are above it.

What then is the essence of the matter? The point is that the tariff rate established in 1926 for heavy industrial goods was considerably below the cost of transport. This predetermined the need for a higher rate of tariff for other freights. Under today's condition, the haulage of virtually all freights for heavy industry is making a profit.

It should be noted that many of the propositions advanced by the author in the second chapter are not set forth by him with sufficient clarity. Thus, in demonstrating the increase in the number of established tariff rates, he does not explain the reason for it. Subsequently, S. F. Kuchurin repeatedly makes reference to the Tariff Committee. However, he does not explain what it was and what its function was.

Some of the questions posed in the book are matters for argument. Among them is the question of the influence of the new tariff for long grain hauls established September 1, 1930. In our opinion, the pronounced reduction in length of haul in 1930 over 1929 is explained chiefly by the change in the regional distribution of purchasing and the geography of grain haulage as a result of the collectivization of agriculture.

Comrade Kuchurin explains changes in rates at various times primarily by the new distribution of production and the need to employ tariffs as a factor facilitating rational distribution of the country's forces of production. This is something with which one may agree, but it must be emphasized that virtually all the tariff reforms were performed at the same time as the reform of wholesale prices, and each reform brought tariff closer to the cost of haulage. It seems to us that the author tends generally to exaggerate the influence of railway freight tariffs and thus diminishes the influence of the system of planning upon the rational distribution of the country's productive forces.

S. F. Kuchurin takes too uncritical an attitude toward the tariff reforms. For example, in describing the reform of 1949, he draws attention to its positive role expressed in the fact that it raised tariff rates for short hauls. This is, of course, true. However, he notes further on that the cost of hauls was then determined on the basis of excessive rates of payment for labor and the equipment of the railways in terms of performance of short hauls. This is not quite precisely the case. In reality, the situation is that in the preparation of the tariff reform of 1949, the cost of hauling certain freights was calculated with corrections for arbitrarily set rates of losses due to short hauls caused by the impairment of car turn-around in these hauls, and led to a overstatement in these calculations of the cost of hauling particular freights for short distances.

At the end of the second chapter, the author presents interesting data descriptive of the relative reduction in the expenditures of the economy of the USSR upon hauling freights during the years of existence of the Soviet government. According to Comrade Kuchurin's calculations, the relative cost of railway haulage has been reduced approximately 50% on the average for all freights during the past twenty-five years, and the reduction has been even greater for certain major freights. For example, the following represents the reduction in the share of freight costs in the price of the commodity from 1927-1928 to 1954: Donba coal from 75% to 13.9%, or more than fivefold, cement from 50% to 16.2%, or more than threefold, etc.

The author also presents data on the profitability of freight hauls for the various five-year plans. Thus, at the beginning of the first five-year plan (1929), the rate of profit on freight was 26.4%, at the beginning of the second five-year plan (1933) it was 3.1%, at the beginning of the third five-year plan (1939) it was 24.3%, at the beginning of the fourth five-year plan (1949) there was a 20.3% loss in freight haulage, whereas at the beginning of the fifth five-year plan (1950) there was a 10.8% profit, and at the beginning of the sixth five-year plan (1956) there was a 29.6% profit. The book emphasizes that "During the pre-war five-year plans, railway freight tariffs not only covered the cost of the operation of the railroads, but provided a considerable level of accumulation for expanded socialist reproduction. Thus, during the first five-year plan, 77.5% of capital investments in the railroads were covered by their own accumulations, in the second five-year plan 26%, and in the pre-war years of the third five-year plan — 100%" (page 66).

The third chapter presents the fundamental problems of methodology in rate-setting. Here we have problems of the point of departure in establishing rates, rate levels and rates of accumulations, the unified nature of transport rates, differentiation of tariffs by types of freights and by distances in accordance with the degree of utilization of cars, and in accordance with speed of haulage.

Let us examine certain possibly dubious propositions in this chapter. We read on page 64 that "Railway tariffs are based on value determined by the level of expenditures recognized by the government to be socially necessary for the entire transport department of production." The author defines his thought more precisely on page 68, where he says that "Transport tariffs are based on value determined by the level — as recognized by the government — of average socially necessary outlays for the transportation of all types of socialist transport, constituting a unified branch of the economy: transport production." Proceeding from these bases he draws the conclusion that it is necessary to establish, for the major freights to be employed in industry, a single system of transport tariffs for all types of transport. However, he writes on page 14 that "The socially necessary outlays of labor in the sphere of transport production are determined in the first instance by the level of outlays of labor for haulage over the railways" and not by the average costs for all types of transport.

Comrade Kuchurin deems the major shortcoming in pric formation for transport to be the absence of a unified system of transport tariffs in which prices for transport serv ices would, as it were, reflect the average socially necessary outlays for all types of transport, and not those in its various branches. This point of view would appear to presuppose complete centralization of the administration of the various types of transport.

If this suggestion were adopted, the various categories of consumers of the products produced in our national economy would be placed on a plane of inequality. Because of the longer periods required for delivery by water than by railway, the consumers would need to have additional circulating capital on hand. This could have the effect of increasing the transfer of shipments from the waterways to the railways. Moreover, if tariffs were identical, the fact that freights are delivered more rapidly by truck would increase the demand for truck haulage.

It is our opinion that a textbook is not the place to advance this type of arguable proposition. These matters are in need of theoretical investigation and practical verification.

This chapter provides a detailed illumination of the bases for the establishment of tariff rates for particular freights (coal, oil seed, etc.) for various distances. The validation of “normal” distances employed in tariff schedules is presented. At the same time, we cannot agree with the author's proposition that tariff rates for “normal distances be set at not less than the expenditures, depending upon the scale of movement” (page 76). In this respect, Comrade Kuchurin bases himself on the resolution of the Council of People's Commissars of the USSR, of February 6, 1930. As we know, in 1930 cost included not only operating expenditures but a 45% investment in expanded reproduction. Thus, in essence, the expenditures as then defined provided virtually complete reimbursement of the cost of haulage, as the author himself writes on page 28. Therefore, it is the total cost of the haulage including both the factors dependent upon and those not dependent upon the scale of movement that should be the minimum tariff rate.

The same chapter examines the foundations for differentiation of tariffs in accordance with the degree of utilization of car capacity. However, it should be observed that the amount of attention given to an historical examination of problems of differentiation of tariffs in accordance with car capacity and shipment weight is inordinately large.

Comrade Kuchurin devotes the next five chapters to an examination of problems of the system of freight tariffs now in existence, to the compilation of tariff manuals and to the general conditions for the application of tariffs. The major shortcoming of these chapters is the fact that they restate in excessive detail matters presented in the tariff manuals (price lists) now in force. It would be desirable, in a textbook for students in railway colleges, to provide the economic justification for the establishment of various rules, to determine the degree to which these rules are justified by economic considerations and calculations of cost as well as by the Statute of the Railways, as this would make possible a better understanding of the essence of these rules. For example, it would be desirable to explain to the reader not only how the charges for the haulage of freights in large capacity cars are calculated, but the economic foundation for this procedure. It would also be desirable to clarify the reasons for establishing tonnage rates for free-flowing freights, etc. The text would only have gained from such a procedure.

Chapter 9 is devoted to rates for passengers and baggage. Unfortunately, it totals only four pages. With so brief a presentation of this problem, the students will not be able to understand the foundations for the organization of passenger rates.

Despite these shortcomings, Comrade Kuchurin's book, USSR Railway Tariffs, is a useful text. It will assist railway college students in studying problems of price formation in transport.

GRUSHO AND SHTEINGAUZ

(Continued From Page 24)

heavy oil used under peak conditions may be of very substantial economic effect in certain circumstances;

e) determination of the economically-justified level of petroleum processing, determination of rational designs and types of petroleum refineries, and, correspondingly, the discovery of economically justified resources of petroleum refineries are located. Solution of this hitherto virtually uninvestigated question (at least in our country) will to a considerable degree govern the structure of the fuel balance of the various districts;

f) determination of the economic desirability and efficiency of various methods of beneficiation of the various types of solid fuel designed for various groups of consumers;

g) determination of rational structures for power generating capacities in various systems. Proper selection of relationships among the capacities of, and the outputs of, various types of stations will to a considerable degree determine the rationality of the structure of the fuel-and-energy balance.

The problems listed do not exhaust the complex of economic investigations involved in elaboration of the unified fuel-and-energy balance. The carrying out of scientific research, practical studies, and investigations of reported data will require a number of organizational measures. Specifically, in our opinion, it will be necessary to elevate the role and significance of the departments under the energy chiefs of the economic councils, and to grant them the functions of administrations of fuel and energy.

(Planovoe Khoziaistvo — Planned Economy — No. 9, 1959)

I. Baranov and F. Liberman:

The Regulations on Product Delivery

The resolutions of the Twenty-first Congress of the Communist Party of the Soviet Union have outlined a grandiose program for the further mighty upsurge of industry, agriculture and elevation of the material and cultural living standard of the Soviet people. Of major significance to successful realization of the seven-year plan is perfection of the organization and planning of the supplies of materials and equipment to the economy. The plans for material and equipment supply being developed should be in complete correspondence with the production plans and should facilitate their fulfillment. Failure of coordination between the plans for supply of material and equipment and the production plans may lead to the establishment of partial disproportions, to the violation of the requirements of the law of planned and proportional development of the national economy.

Recently, the party and the government carried out a number of very important measures to improve the supply of materials and equipment to the national economy. Among these measures, the following title: "Regulations on Delivery of Products Earmarked for Production and Technical Purposes and Deliveries of Consumer Goods," which went into effect July 1, 1959, is of major significance.

These regulations will play an important role in national organization of the supply of materials and equipment to enterprises. The delivery regulations will strengthen the planning principle and the factor of organization in mutual relationships among enterprises, will raise the significance of business contracts in organizing the fulfillment of government plans and will make for a reinforcement of the material responsibilities of shippers for prompt delivery of products. The regulations on deliveries have the function of facilitating the enforcement of cost accounting, of adherence to plans and fulfillment of contracts. The economic significance of the regulations lies in the fact that they will facilitate the organization of correct mutual relationships between shippers and consumers, and the mobilization of hidden resources in production for the fulfillment and over-fulfillment of plans.

Planned guidance of deliveries of products on the scale of the country as a whole is an important means of carrying out the economic organizational functions of the Soviet state. The regulations constitute a new form of guidance in the delivery of products on the basis of a unified government plan of supply of materials and equipment, determining the economic relationships betwen suppliers and consumers. Proper organization and fulfillment of planned deliveries within an economic administrative district substantially governs the fulfillment of plans and orders for delivery of products to other economic administrative districts, constituent republics and for the needs of the Union as a whole. Therefore, the operation of the regulations for delivery will apply to all deliveries of products both within the given economic administrative district and to other economic administrative districts and constituent republics regardless of the line of subordination of the ente prise and organizations constituting the shippers and purchasers respectively.

The regulations on deliveries of products of importance t production and technology note that the chief administrations for inter-republic deliveries of products under the USSR State Planning Committee, the supply and purchasing agencies of the constituent republics, the economic councils, ministries, bureaus, the cabinets of the autonomous republics, the executive committees of local Soviets of Working People's Deputies, and the enterprises and economic organizations must see to unconditional fulfillment of plans and orders for all deliveries. Particular attention must be given to first-priority fulfillment of shipments to meet the needs of the USSR as a whole, also those of other constituent republics and economic administrative districts.

Prompt fulfillment of obligations under economic contrac is one of the major requirements of government planning discipline. Violation of these obligations creates difficulties in the fulfillment of government planning orders at the various enterprises and may give rise to violation of the economic proportions envisaged by the plan. Therefore, thes regulations envisage serious sanctions against contract violators, particularly with respect to the deliveries of products for the needs of the USSR as a whole, and also for those of other constituent republics and economic districts. Failure to fulfill these deliveries will mean a 50% higher penalty, or in other words, 4.5% of the value of the produce not delivered on time.

The regulations for delivery of mass consumption goods also envisage a 50% extra penalty for failure to deliver commodities needed by the Union as a whole and for other constituent republics. If the shipper (the marketing or supply organization) pays a 50% extra penalty to the purchaser and the fault is that of the processing organization, the latter will bear a similar material responsibility even if it is i the same economic administrative district or constituent republic as the recipient.

To combat localist tendencies constituting violations of the interests of the country as a whole, a fine is provided for releasing products without order. The regulations for shipments state that in cases in which production being distributed in accordance with plan is released to the recipient to whom the given produce has not been assigned on order of planning agencies, the shipper must pay the given supply organization a fine that may range as high as 100% of the value of the commodities shipped without order.

Responsibility for failure to deliver products is borne by the shipper. Along with material responsibility borne by the enterprises and business institutions, their management and other responsible persons guilty of not fulfilling plans and orders for delivery of products are subject to disciplinary, financial, and, in certain circumstances, criminal responsibility, in accordance with the decree of the Presidium of the Supreme Soviet of USSR of April 24, 1958.

At the present time, the assignment of orders for the manufacture and delivery of products is carried out by the chief administrations for inter-republic goods deliveries under the USSR State Planning Committee, in coordination with the state planning agencies of the constituent republics. This method of assignment of orders meets the interests of the best organization of supply of goods and technology to the union republics, assures proper utilization of the productive capacities of the enterprises, with due consideration for specialization and for the most rational ties between consumers and shippers.

Centralized distribution of production is documented by issuing orders to shippers and purchasers for the delivery of products. The issurance of orders in accordance with the plans for inter-republic deliveries and deliveries for the needs of the Soviet Union as a whole is carried out by the chief administrations for inter-republic deliveries under the USSR State Planning Committee, whereas issuance of orders for products manufactured and consumed within a constituent republic is performed by the corresponding supply and purchasing agencies of the union republics. These orders constitute the basis on which contracts for product deliveries are concluded.

The Regulations on Deliveries will strengthen the function of the contract not only as a tool for the carrying out of the delivery program, but as a medium with whose aid it will be possible to reveal all kinds of problems, among others, the issuance of superfluous and unnecessary products to enterprises, lack of correspondence between the plan for supply of goods and equipment and the production plan, lack of correspondence between orders for the delivery of equipment and issuance to the purchasers of funds for the purchase of this equipment. Enterprises and organizations are placed in a position to take the steps necessary to eliminate the violations, prior to the conclusion of contract.

Cases occur, in business practice, of lack of correspondence between enterprises' orders for equipment and the funds issued to purchase. In order to reveal such discrepancies in ample time, the regulations on the delivery of products of a production and technical nature envisage that the contract for the delivery of products paid for out of capital investment financing is deemed not to have been concluded if the shipper does not receive, simultaneous with the return of the signed contract, data signed by the manager and the chief accountant of the purchaser that appropriate funds have been assigned to purchase these products. Consequently, the shipper will not have to deliver machines and equipment to a purchaser who has not earmarked funds to pay for these products.

Orders for products as issued by the chief administrations for inter-republic delivery of products under the USSR State Planning Committee and by the supply and marketing organizations of the union republics constitute a means for bringing the delivery plans down to the enterprises which are to ship and consume them. Moreover, the distribution of production by this system of orders makes it possible to envisage beforehand, in planned fashion, the most rational contract relationships between shippers and consumers.

The regulations envisage the delivery of products to be used as equipment and for production purposes, as well as of consumer goods, only in accordance with contracts, which may be concluded by the following:

A) Directly between producers and consumer enterprises;

B) Between the producing enterprises and marketing and wholesale organizations, to market the product of the former;

C) Between consumer enterprises and marketing organizations appearing in the capacity of shipper;

D) Between producing organizations and warehousing agencies which transport the product to their storage depots for later release to the consuming enterprises;

E) Among marketing, warehousing or wholesale merchandising organizations.

The job is for the planning and supply-and-marketing agencies, in bringing about firm relations between consumers and shippers, to proceed from the need to develop direct contractual relations between the manufacturing agencies and the consuming enterprises, as the most desirable and economically advantageous type of economic relationship.

Direct contracts should be concluded between shippers and consumers in all cases when such contracts will make for prompt and uninterrupted supply of products in the quantity and assortment needed by the consumer. Direct ties of this kind correspond to the interest of the national economy, as they create the best conditions for fulfillment of plans of production and shipment of products as well as of commodity circulation plans.

Direct contracts between enterprises should be concluded for the shipment of such products as machinery and equipment, castings, forgings, stampings, machine parts and assemblies, as well as other types of products required for production and manufacturing and delivered to consumers with whom the shippers have direct relationships in production. Industrial enterprises should conclude contracts for the shipment of consumer goods to be disposed of through the market and otherwise, for local consumption, directly with the enterprises and with the retail commercial organizations operating under cost accounting requirements.

In certain cases, contracts for the shipment of products to other economic administrative districts, constituent republics, and for the needs of the USSR as a whole, may be concluded between the corresponding supply and marketing agencies of the constituent republics, the councils of economic affairs, the ministries and bureaus. In 1959, contracts of this type for shipment of petroleum products were concluded, for example, by the Rosglavneftesnabsbyt of the RSFSR State Planning Commission with the appropriate supply and marketing organizations of the Ukraine, Kazakhstan and other constituent republics. These contracts envisage mutual obligations of the two parties as dictated by the particular problems of petroleum product deliveries and also provide for financial responsibility for failure to fulfill the obligations undertaken. Direct contracts for the shipment of petroleum products to the consuming enterprises are concluded between these enterprises and the territorial petroleum products purchase and supply agencies in their areas, or with the petroleum depots of these administrations.

If necessary, the contracting parties may involve other enterprises and organizations operating on a cost accounting basis into participation in these direct contracts. These latter organizations must then participate directly in elaborat- ing the conditions of the contract. The formulation and signature of this type of subsidiary contract may be reassigned to higher agencies.

In accordance with the fact that shipment of products out of contract results in irrational shipments, and the shipment of products not needed by and not ordered by the consumer, the formation of superfluous reserves, etc., the regulations on deliveries provide that the enterprises and organizations must document all shipment in the form of contracts or orders, including shipments of products not within the sphere of distribution in accordance with plan.

This will facilitate reinforcement of cost accounting and careful organization of the supply of materials and equipment to the economy.

The delivery of products without contract or orders is permitted only after the conclusion of the period established for the signing of contracts and the issuance of orders, as well as in cases envisaged by acts of the cabinet of the USSR, and those of the constituent republics. The relationship between the purchasers and shippers in delivery without contract or orders is also regulated by the regulations on shipments. This means, statistically, that the property sanctions established by the delivery regulations may be applied to failure to make deliveries into the government reserve, which today is carried out without contracts.

In accordance with the Regulations on Deliveries, contracts will be concluded, as a general rule, either for a year or for the period required to manufacture and to deliver the product. With the object of simplifying and reducing the volume of work by the enterprises and organizations involved in concluding contracts, the regulations provide that if they have a continuing business relationship, shippers and purchasers may extend a contract currently in force to the following year. In such instances, the sides merely have to agree on the specifications for the products to be delivered during the year ahead. This procedure makes it possible to avoid annual conclusion of contracts, as was necessary under the Basic Principles for Delivery that were previously in force.

The regulations also state the conditions in which shipments may be documented in the form of purchase orders. For example, purchase orders may be the type of documentation employed for delivery of equipment needed for purposes of production costing not over 75,000 rubles, or in a quantity of not more than one actual carload each quarter. Single deliveries, as well as deliveries of products in cases in which there is no need to arrive at agreements on specifications with respect to assortment or engineering specifications, may also be documented in the form of purchase orders. The purchasers must issue purchase orders to the shippers within ten days from the time that they have been informed that the products have been earmarked for them. The purchase order is considered to be accepted if, within ten days after it has been received, the shipper has not informed the purchaser of refusal to accept the order.

Annual contracts have to be signed within sixty days after approval of the plans for supply of production equipment and the plans for distribution of commodities, and short-term contracts as well as contracts for single deliveries must be concluded within twenty days after the contracting parties have been informed of the need for such deliveries.

Contracts and purchase orders for delivery of products must state the conditions that will assure delivery in the stated quantity and quality, nomenclature (assortment), completely and on time. The quantity of products to be delivered is determined in the contract or the purchase order on the basis of the warrant order issued in terms of the plan for delivery, or by agreement of the parties in the case of delivery of products not included in this plan.

The decisions of the Twenty-first Congress of the CPSU require that all enterprises and business organizations engaging in delivery take every possible step to increase the quality of production and to expand the assortments thereof, particularly as applied to consumer goods. Proceeding from these decisions, the regulations require shippers to assure shipment of products that will, in quality, completeness, packaging, and grading, correspond to the appropriate government standards, technical specifications, samples (specimens), and to the contract.

In order to cause shippers systematically to improve the quality of their products, the purchaser is given the right, provided this is written into an agreement with the shipper, to require, contractually, the delivery of products of higher quality than those set in the government standards and technical specifications. In cases where this is necessary, the shipper may suggest changing the government standard or th technical specifications and the prices for products of higher quality. The ministries of commerce of the constituent republics and the government bureaus of commodi quality inspection should utilize the right they enjoy to prohibit business organization from accepting poor quality goo from industrial enterprises and demand prompt replacemen by quality goods.

Failure to meet the specifications with respect to the quality and completeness of the products, crating, packaging and grading carries with it rigid material responsibility on the part of the shipping enterprise. Specifically, for delivery of poor quality or incomplete products to be employe in production and engineering, the consumer has the right to recover from the manufacturer a fine to a value of 15% of the cost of such products, and 20% for delivery of poor quality or incomplete consumer goods. Moreover, the shipper is required to reimburse the cost of the product to the consumer and to make good his losses, over and above the fine that has been paid. The processor is also required to replace without cost or satisfactorily repair products found to be defective within the term of the manufacturer's guarantee, with the exception of cases in which the defects are the responsibility of the purchaser due to poor storage or employment of the products.

In order to facilitate economic utilization of crating and crate materials in the economy, the regulation on deliveries provides that the shipment of productions in containers requires no crating, or the primary packaging or minor cra ing, if the Committee of Standards, Weights and Measuring Instruments of the USSR Council of Ministers has not established that the given product must be crated even when shipped in freight-car container units.

The regulations for delivery of consumer goods provide substantial possibilities to the purchasing organizations for influencing shippers to expand assortments of popular goods Specifically, the purchasing agencies have the right, both in agreeing to annual lists, and in spelling out quarterly specifications, to refuse products offered by the shippers if they are not in demand due to poor quality, outdated design, fashion, model, etc. In such instances, the purchasing agency is subject to no sanctions for refusing such commodities. However, this does not mean that the purchasing agency has the right, under all conditions, to refuse goods earmarked for him if there is temporary difficulty in selling them. A reduction in the total of earmarked commodites can be made only by the planning agencies.

An examination of disagreements with respect to assortment arising between shipper and consuming agency is made the duty of the arbitration agencies. Previously, investigation of arguments on the assortment of industrial consumer goods was carried on by higher agencies of the two conflicting parties. However, in practical experience, such differences in many cases remained unresolved until the end of the business year, and this tended to reduce the responsibility of the shipper for failure to meet the purchaser's requirement with respect to assortment.

The arbitration agencies are required to satisfy properly founded demands by purchasing agencies with respect to the assortment of commodities, giving due consideration for the production capacities of the manufacturing shippers.

In cases where this is necessary, the arbiters are expected to advance proposals to appropriate economic councils, ministries, and bureaus to change the manufacturing plans of the shippers in the direction of reducing the output of commodities for which there is little demand, and increasing the output of commodities for which demand is great. If the parties have not agreed upon the specifications for commodities that are not assigned within a framework of planning, the arbiters do not have the right to compel the purchasing institution to accept commodities which they do not wish.

In order to facilitate the uninterrupted and rhythmical functioning of the consuming enterprise and to avoid the building up of excessive supplies of commodities, the shipment of products within each quarter, must, as a rule, be in equal volume each month. The shipper and the purchaser have the right, when necessary, to provide in their contract for other delivery periods within the quarter or within the month. Shipment ahead of schedule is permissible only with the agreement of the recipient. Products shipped ahead of schedule and accepted by the purchaser are credited to the fulfillment of the plan for the next delivery period (month or quarter).

Funds for purchase of goods earmarked to enterprises and organizations on the basis of the plan for delivery usually remain available to the end of the business year. Therefore, the regulations on deliveries envisage that the volume of product not delivered or not selected in a given period (for example, a month) has to be delivered and selected in the following period. If a given quantity of product has not been delivered or selected in the current quarter, it may be delivered (or selected) during the first two months of the next quarter, although for foodstuffs this applies only to the first month of a following quarter. Any other procedure for making good shortages in delivery or selection of goods not received in the stated period has to be provided for by contract.

Present legislation forbids enterprises to ship products not covered by planning, contract, or order. However, in the interests of protecting socialist property, preventing irrational hauls and standstills of transport facilities, the regulations on delivery require an enterprise to accept from transportation agencies, and to be responsible for the storage of products, even if delivery was not envisaged by plan, contract or order. A purchaser may refuse to accept products shipped to him only if their quality has so changed due to damage or spoilage that partial or complete utilization of the product for the purpose for which it had originally been envisaged has become impossible. It must be borne in mind that responsibility for spoilage or damage to products due to failure to remove it from a railway station or a dock is borne by the purchaser if this failure to remove on time proves to have been his responsibility.

The procedure and terms for acceptance of products for purposes of production and equipment, as well as for consumer goods, are determined in quantity and quality by the instructions approved by the government arbitration office of the USSR Council of Ministers on May 27, 1959. These instructions resolve problems of procedure and terms of acceptance, documentation, and presentation of complaints and examination thereof, for all types of products (commodities).

Experience has shown that checking the quantity and quality of products at the depots (warehouses) of marketing and supply organizations, and at those of wholesale trading organizations, leads to impairment of the quality of the product and gives rise to unproductive expenditures in repackaging. Therefore, the instructions provide that such a check may be made at such depots and warehouses only in cases provided by contract. Furthermore, it is established that when products are reshipped without the opening of the crating or the factory packing, the original shipper is not relieved of responsibility for inadequate quantity or spoilage of the products unless this has been the fault of the organization reshipping the products.

The Delivery Regulations are based on the need for strict adherence to Soviet price policy by the various enterprises and organizations on further reinforcement of payments discipline, and on acceleration and simplification of settlements of accounts in the economy.

Delivery of products must be only in accordance with prices approved or agreed upon in the manner indicated. Contracts violating these prices are invalid and payments are to be made only in accordance with approved prices. Should prices change, payments are made on the basis of the prices effective at the time of shipping, if the price change order provides no other procedure.

Settlements for products must, as a rule, be made directly between the shippers and receivers. The participation of marketing and supply organizations, as well as of wholesale trading organizations, in the settlements of accounts, is permissible only in cases envisaged by instructions of the USSR State Bank, the USSR Finance Ministry, or under special conditions. The form in which settlements are made is established in contracts in accordance with the nature of the products shipped, the procedure and location of transfer of ownership and other conditions of fulfillment of contractual obligations. In this connection, it must be borne in mind that the primary form is that of payment by acceptances, as this is the form that best meets the interests of the purchaser and supplier, in terms of cost accounting. Justifications for refusal of an acceptance of the payment demands of the supplier, provided in the delivery regulations and contracts, make it possible for the purchaser and payer to employ the ruble most effectively to compel the shipper to fulfill the obligations undertaken in the delivery contract. At the same time, the cost accounting interests of the supplier are met both by the fact that he can recover a penalty from the payer for failure to hold to payments discipline, and by transferring an out-of-town defaulting payer to a system of payments by letter of credit, while an organization in the same city may be required to pay in advance.

Transfer of settlements of accounts to the basis of letters of credit and to advance payments may be performed by bank offices in the form of sanctions, accompanied by setting up a special procedure for extension of credit and payment of accounts for various enterprises, or else in the form of monitoring the status of reserves of property in excess of that provided for in the plan. Upon receipt of information from the bank to the effect that such forms of payment have been established, the shipper is not permitted to ship products without having received a letter of credit or a document confirming payment in advance. If the payer does not present a letter of credit for payment for products to be utilized as equipment or for production purposes, the shipper has the right to exact a penalty of 3% of the sum of the defaulted letter of credit. Simultaneously, the shipper is required to take steps to obtain from the purchaser, or the superiors thereof, a release for delivery of the product to other recipients.

Failure on the part of purchasing enterprises to carry out the obligations undertaken under shipping contracts, and, specifically, failure promptly to provide releases for shipment of products, unjustified refusal to accept and pay for products, significantly complicates the finances and business activities of the shippers. Violations of this type carry the requirement that the purchaser pay to the shipper a fine at the scale established in the regulations on deliveries. Thus, for failure to provide release orders for the full quantity of products to be shipped during a given quarter, the purchaser must pay not only a fine of a thousand rubles for each delay in issuance of the release, but a supplementary fine of 3% of the cost of the product, as failure to issue a release is, in essence, a refusal of the products.

In connection with the fact that the deliveries regulations went into effect as of July 1, 1959, all relationships having to do with deliveries prior to July of this year have to be regulated by the Basic and Special delivery conditions, on the basis of which enterprises and organizations concluded contracts for product delivery in 1959. It follows specifically from this that all property sanctions (penalties, forfeits, and fines) for improper fulfillment of delivery contract obligations occurring prior to July 1, 1959, are to be calculated on the bases provided in the appropriate basic B and special S delivery conditions. All failures properly to carry out contractual obligations from July 1 of this year on are to be penalized on the scale provided for in the Regulations on Deliveries.

It should be noted that the Regulations on Deliveries solve only those problems of delivery contracts writing and fulfillment that are common to all shippers and purchasers. A more detailed procedure for delivering particular types of products will be provided for in Special delivery conditions. These latter will have to solve problems pertaining to the specific features of deliveries, payments, and procedures for acceptance of products, in terms of quantity and quality, the procedure for and time periods in which crating is to be returned, responsibility for fulfillment of undertakings which are deemed to be substantial, for example, for inadequate quality of consumer goods, as discovered by commercial organizations in checks by their inspectors. Moreover, the special conditions must envisage minimum standards for transit shipments of products to the receiving agencies.

The USSR Council of Ministers has instructed the chief administrations for inter-republic deliveries of products under the USSR State Planning Committee, with the participation of the supply and marketing agencies of the constituent republics, the economic councils, the ministries and bureaus, to develop, within four months, and on the basis of the Regulations on Deliveries, special conditions for deliveries of particular types of products to be employed in manufacture and of consumer goods. The government arbitration office under the USSR Cabinet has been instructed to confirm the special conditions for delivery within two months after receiving them. Special conditions for delivery should be worked out only for those homogeneous categories of products shipments which present common specific features, for example, metals and metal products, coal and shales, lumber products and prefabricated houses, fabrics, footwear, meat, meat products, etc. In this connection it is to be borne in mind that individual peculiarities pertaining to the delivery of any given types of product may be covered in contracts among the parties concerned.

Until the new special delivery conditions have been approved, the special delivery conditions now in effect remain valid to the degree that they do not contradict the Regulations on Deliveries. Specifically, there is to be no renegotiation of contracts concluded by enterprises and business organizations for the delivery either of goods to be used in manufacture or of consumer goods in 1959. Clauses in these contracts contradicting the Regulations on Deliveries lose effect as of July 1, 1959. The special delivery conditions effective prior to July 1, 1959, remain valid in those portions thereof that pertain to transit standards.

Personnel of planning, supply, and marketing agencies, enterprises and orgainzations must make a careful study of the Regulations on Deliveries of Products, so as to apply them correctly in planning shipments of products and in fulfillment of contracts.

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A. Aganbegian:

Overtake and Surpass the USA in the Productivity of Labor

Fulfillment of the fundamental economic objective of the USSR—that of overtaking and surpassing the most advanced capitalist countries in production per head of population in the briefest possible historical period—depends, to a decisive degree, upon increasing labor productivity.

There is an indissoluble relationship between the basic economic indicator (production of goods per head of population) and the labor productivity index (output of goods per worker engaged in material production) which may be expressed by the following formula: (1)

Output per head of = labor productivity x ratio of workers
population
in production of
material goods to population

In 1957, labor productivity in the USSR was between 33% and 40% of that in the USA in the economy as a whole. In industry, it was smaller by a factor of 1.7, in transportation it was one-third of the American, and in agriculture it was one-fourth to one-fifth of the American. The share of workers in material production in the total population is described by the following data: 290 persons per thousand in the USSR, and 190 in the USA, of which 95 in the USSR and 110 in the USA were in industry, 20 in the USSR and 20 in the USA were in building construction, 25 in the USSR and 20 in the USA were in transport, and 150 in the USSR and 40 in the USA were in agriculture. (2)

Thus, only in industry is the share of workers to total population higher in the USA than in the USSR. Moreover, the volume of industrial production per head of population in the USA in 1957 was 2 1/2 times as great as in the USSR. The level of American production exceeded that of the USSR by 100% due to the difference in labor productivity and only by a factor of 1.2 due to the difference in the percentage of industrial workers to the total population.

Historically, the major role in the elimination of the Soviet lag behind the most advanced capitalist countries in output per head of population is played by increase in volume of production due chiefly in rise in labor productivity. From 1913 to 1957 output of industrial products per head of population rose 23-fold in the USSR (while in the USA it rose by only 130%), of which the rise in labor productivity accounted for an increase by 9.5 times and the increase in the percentage of industrial workers to total population represented a 140% rise.

In the prospects for the future, the dominant role of rise in labor productivity in elevation of the fundamental economic index will continue to increase. The point is that the other factors determining the scale of production per head of population (the percentage of workers in material production to the total population) changes insignificantly from year to year and cannot give our country the rate of increase in the fundamental economic index that is required.

The Paths to Be Followed in Overtaking the USA in Level of Labor Productivity in Industry

Currently, the productivity of labor in the industry of the USSR is 50% higher than in France and 30% higher than in England. In the next 2 or 3 years the USSR will surpass West Germany in this respect, and reach first place in Europe. The most important objective has now come on the order of the day—that of overtaking and surpassing the USA in labor productivity.

The higher labor productivity existing in American industry is related primarily to the fact that the American worker has 150-200% more energy and electricity at his disposal than does the worker of the USSR. This is explained primarily by the fact that the USSR lags behind the USA in the technological equipment available to industrial workers. In terms of level of technology the USSR does not yield place to, and in a number of fields leads the United States, as is testified to by the launching of artificial earth satellites and of rockets into cosmic space. However, in terms of the scale of employment of progressive technology and equipment in the majority of branches of production, the USA is still ahead.

Let us compare the equipment available in the machine building industry of the USSR and the USA. The USSR has developed high-output machine tools with programmed control, automatic lines, etc., which may justifiably be termed the world's best. But on the whole, the technological and economic characteristics of the available installed metal-working equipment of the USSR are lower than that of the USA. In the first place, the age of the machine tools in the USSR is slightly greater than in the USA. In the second place, the structure of the installed metal-working equipment in the USA is better: the share of pressing and forging machines, the percentage of hammers is smaller and that of high-output sheet forging, hot forging and coining presses is greater. In the third place, the machine tools of the USA are distinguished by a greater average power. The number of metal-working machine tools in the USA is greater than in the USSR, although the number of workers in the metal-working industries in the two countries is virtually identical. The most progressive methods of casting (die casting, precision casting, etc.) are more widely employed in the American foundry industry than in the USSR.

Therefore, equipment of our industry with the most advanced technology will be of decisive importance in terms of overtaking the USA in labor productivity. And this will require that heavy industry, and the manufacture of machinery in particular, continue to be given first priority. During the seven-year plan, whereas total industrial production is to rise by 80%, the output of heavy industry is to be expanded by 85-88%, and that of the manufacture of machinery is virtually to double. As a result of the fulfillment of the seven-year plan, the USSR will come close to the USA in the level of electric power available per worker, which will nearly double during this period in our country.

Of importance in overtaking the USA in the technological equipment of industry is extensive development of automation of production as the major trend in technological progress.

Whereas in 1957 there were approximately 60 automatic lines in the USSR, it is planned to introduce not less than 1300 such production lines in the 1959-1965 period. The outlays of labor in automated sectors of production are reduced severalfold. Thus, in an automatic plant to make sprocket-and-sleeve chains for tractors and agricultural machinery, labor productivity is 550% higher than under the previous method of manufacture.

The high level of labor productivity in American industry is also ascribable in part to the dominance of the conveyer system of production, which makes for an intensification and continuity of production processes. In the USA, mass production is combined with extensive specialization and subcontracting, and that increases the efficiency. The experience of the majority of Soviet machinery-manufacturing enterprises shows that introduction of mass production methods increases labor productivity by 100% and more. The extensive development of specialization in the upcoming seven-year plan will considerably increase the level of labor productivity in our industry.

However, it would be wrong to reduce the reasons for the Soviet lag behind the USA to the difference in level of equipment and the organization of labor of industrial workers. There are a number of branches of industry in which the Soviet Union has overtaken the USA in terms of production economics and equipment but continues to lag behind it in labor productivity. For example, in the iron and steel industry, Soviet employment of automation in the blast furnace and open hearth departments is more extensive than in the USA. About 90% of all our pig iron and steel is melted in mechanized and automated furnaces. Unlike the USA, the majority of our open hearth furnaces are equipped with automatic regulation of heat conditions. The unit efficiency of our blast and open hearth furnaces is considerably greater than in the USA. The coefficient of utilization of useful volume in the blast furnaces of the USSR is 0.79 (1957), whereas in the USA it is only 1.06 (1956). The amount of steel made per square meter of hearth area in open hearth furnaces in the USSR is 6.98 tons (1957) and in the USA it is about 5.6 tons (1956). However, the amount of pig iron smelted per blast furnace department worker in the USA is 30% higher than in the USSR, and the amount of open hearth steel melted in this department is between 50% and 100% higher in the USA than in the USSR. This is to be explained chiefly by the fact that in the USA the number of workers on duty in a single blast or open hearth furnace is smaller than in the USSR. Moreover, for the iron and steel industry as a whole, productivity of labor in the USA is more than twice that in the USSR, due to the presence of a considerable number of suxiliary workers. In the USA, auxiliary workers number 60%-70% of those engaged in the major departments, whereas in the USSR the figure is 140%. This testifies to the difference in the level of mechanization of auxiliary operations and the organization of auxiliary services.

The existence in the USA of highly developed auxiliary branches of industry servicing the major branches (the making of castings, forgings, supports, tools, monitoring and metering apparatus, etc.) creates conditions for a reduction in the share of auxiliary workers in such enterprises. Approximately two-thirds of all the castings in the USA are made by specialized foundries and the majority of machinery-manufacturing enterprises have no foundry shops at all. More than two-thirds of the machinery-manufacturing enterprises in the USA likewise have no forge or tool shops, but utilize the products of specialized enterprises. At the same time, in the USSR, the auxilliary branches of industry are inadequately developed and therefore the production of castings, forgings, supports and tools is carried out at each plant independently to a considerable degree by semi-handicraft methods in which man-hour ou put is low. Suffice it to say that in the foundry industry, molding is less than 50% mechanized, the making of cores and the fettling and cleaning of castings has been mechanized on the average only 10% or 15%, whereas virtually no mechanization has been introduced into the preparation, readying and delivery of stock, the knocking out of casting the transportation of sand and a number of other highly laborious operations.

Most auxiliary workers are manual laborers. In the machinery building industry of the USSR, about 50% of the work is manual labor, and in the manufacture of electrical machinery it even reaches 60% of the total labor requirement of manufacture. In 1954 manual labor not associate with machines and mechanisms (and this represents only a portion of the manual laborers) represented 68% of the workers in the lumber industry, 44% of the workers in coa mining and 35% of the workers in the iron and steel industry.

In the industry of the USSR, the number of auxiliary workers constitutes about one half of the total, according to preliminary calculations. About one quarter of the workers in industry are engaged in auxiliary departments, and the remainder of the auxiliary workers are in secondary operations in the primary departments. Among the auxiliary workers, 30% are engaged in transport operations, of whom 20% are stevedores, carriers, and draymen, 11% are inspectors and checkers, 14% are engaged in the repair and servicing of equipment and 17% are handymen.(3) In our machinery-manufacturing industry more than a million persons are engaged in inspection alone; this constitutes nearly a fifth of all the production workers in this branch of industry. The economic and technical and organizational level of auxiliary work still lags behind that of primary production, and the diminution of the laboriousness of the fundamental processes is not supported to the necessary degree by comparable progress in the auxiliary processes, with the result that the percentage of workers engaged in secondary operations is increasing. Rise in labor productivity is also being restrained by an increase in the expenditures of auxiliary time (primarily manual) in the total working time of industrial workers. For example, in machine tool operations, the speed and depth of cutting has risen 3-or 4-fold in the past 20 years without any significant progress in economy of auxiliary working time, the result being that the share of machine time is diminishing, and the share of time spent on manual operations is increasing by comparison.

Comparison of the structure of the number of industrial workers in the USSR and the USA shows that in terms of the labor productivity of the primary workers, the USSR lags about one-third behind the USA, whereas if one considers all workers (primary and auxiliary), the lag is about 50%. Therefore, all-round mechanization of auxiliary operations and improved organization of supplementary services is of major significance.

The seven-year plan for 1959-1965 envisages a fundamental change toward predominance of specialization and mechanization in auxiliary operations. In 1965, specialized capacities in the casting of iron will be raised to a total annual output of 14,700,000 tons, the corresponding figure for steel casting being 4 million tons, and that for forgings being 3,800,000 tons. There will be a pronounced increase in specialized capacities for manufacture of tools, measuring instruments, etc. A great deal of attention will be given to the mechanization of auxiliary production, and the problem of all-round mechanization and automation in this field will be posed. In the foundry and forge industry, the large-scale introduction of welding by Paton's method will substantially reduce the number of jobs of low output and high labor outlay. As a result, by 1965 our industry will be close to the American in the efficiency of employment of auxiliary workers, the percentage of which will diminish relative to the total number of workers. At the same time, the specialization and mechanization of auxiliary jobs in the USSR will be freed of the false relationships and distortions existing in the capitalist industry of the USA.

The existence of a higher level of labor productivity in American industry also relates to the intensity of labor which is greater than in other advanced capitalist countries. The inhuman intensification of labor that is inherent in capitalist countries is not applicable to socialist society. Therefore, it would not be valid to pose the problem of overtaking the USA in intensity of labor.

The level of labor productivity in the USA has to be achieved and surpassed at a lower level of intensity in the USSR, with a shorter working day, and by means of a higher level of technology and organization of production and labor. At the same time, it is necessary, in our branches of industry, to assure labor of normal intensity by eliminating shutdowns and increasing the useful utilization of working time. Here it is appropriate to cite F. E. Dzerzhinsky, "The low intensity of labor in our country cannot be excused by the fact that abroad there is a capitalist system and here a Soviet system ... . Increase in the intensity of labor under the conditions of the dictatorship of the proletariat is not exploitation of the working class, but merely an effort on the part of the working class itself on behalf of defending the economic positions it has wrested from the bourgeoisie."(4) This holds true today. The considerable amount of down time within operating shifts in the coal industry, in lumbering, in construction, in the manufacturing machinery and in a number of other branches of industry reduces the level of labor productivity by an average of more than 20%. These additional resources of working time must be utilized.

Proceeding to an examination of particular branches of industry, we must take note of the fact that the USSR lags considerably behind the USA in level of labor productivity in branches of the mining industry, in lumbering and in the chemical industry (Soviet productivity only being 40% or less than in the USA). Our lag is smaller in the manufacture of machinery, in the production of metals, in the light and foodstuffs industry (33% to 50%).

Labor productivity in the extraction industries of the USA is approximately 150-200% higher than in the USSR. This is demonstrated by comparing the number of workers in the extractive industry in the two countries. Although the total number of industrial workers is approximately the same, about 20% of the whole are engaged in the extractive industries in the USSR (recovery of coal, petroleum, ores, other minerals, and lumbering), whereas only 7% are so engaged in the USA. (5) In the coal industry of the USSR, there were 1,021,000 workers in 1957, and they extracted 463 million tons, or about 454 tons per worker. In the same year, the United States employed 235,000 workers in the coal mining industry, and they extracted 467 million tons, or in other words the average annual output per worker was 1,990 tons, or 4 times as great as in the USSR.(6)

In 1957 coal represented 65% of the total mineral fuel in the USSR, whereas petroleum provided 26%, natural gas 4.5%, peat and shales 4.5%. If we take the production of conventional fuel per worker in the coal industry of the USSR as one, the corresponding index in petroleum extraction is 2.2, in gas (including the cost of transportation) it is 7.5, in peat and shales 0.4, and the average for the entire fuel industry is 1.6. In the USA, the same total index was 3.2 in 1956, as the production of coal represented 35% of total fuel output, that of petroleum 36%, and that of natural gas 29% (peat and shale are not produced). Thus, the more efficient structure of the fuel supply alone causes the level of labor productivity in the fuel industry as a whole (recalculated as conventional units) to be twice as high in the USA as in the USSR (3.2:1.6). In the USSR it is planned that by 1965 the share of petroleum and gas will be 51% of toal fuel output, and that of coal will drop to 43%. The execution of the measures outlined by the party and the government to achieve a sharp increase in petroleum and gas output will result in the attainment of a more efficient fuel structure in the USSR than in the USA in the next 12-15 years, and this will lead to an increase in labor productivity throughout the fuel industry in the USSR of 100-150%.

Foreign economists when writing of the achievements of the extractive industry of the USA take note of the favorable natural and transport conditions in which it functions. Thus, British engineers and economists have pointed to the high metal content in the ores, the closeness of mineral raw materials to the centers in which they are consumed and the shallow deposits of coal and ores in the USA, making possible the employment of strip mining. However, the primary reason for the Soviet lag behind the USA in the level of labor productivity in the extractive industry does not lie in this. In such fields of industry as petroleum recovery, the natural conditions existing in the USSR are considerably superior to those in the USA, and yet labor productivity is very substantially lower. In the production of coal, the geological conditions of certain districts in the USSR are no worse than those in the United States, yet the production of coal per worker in the mines of the USA is higher than in any district of the USSR. The main reason for this is backwardness in technology and the organization of production.

The higher level of labor productivity in the coal mining industry of the USA is to be explained chiefly by the more rapid advance of the face, which is approximately 90-100 meters per month as against 30-34 meters in the USSR (where 70 meters is the level attained in the most advanced longwalls). The difference in the rate of advancement of the face in the USSR and the USA relates to the fact that mining is done by opposite methods. In the USSR, coal is mined along long faces, and in the USA along short faces. (7)

Further, the higher productivity of labor in the coal mining industry of the USA is attained by reduction in the number of workers engaged at the surface, by greater mechanization and superior organization of their work. For example, in the USA there is no hand sorting, there is a minimum number of workers engaged in the lamp shops, the timber yards, etc. As far as the smaller number of workers who are engaged in the so-called "other" underground jobs is concerned, this is achieved in the USA to a considerable degree by reduction in the number of personnel engaged in safety operations (gas measures). This line of conduct is absolutely out of the question for the USSR. Also of major significance is the concentration of coal production in the USA at the largest mines with the highest productivity of labor and the best natural conditions (this has been done by reducing coal output and shutting down the small mines). In the USSR, strip mining yields 19% of coal, and in the USA it yields 25%.

Elimination of the lag in labor productivity in the extractive industries will be of enormous significance for our country. The low level of rate of productivity in these branches of industry increases the labor requirement for industry as a whole and its cost (coal, lumber and ore represent a substantial percentage of the total cost of production), increases the cost of capital investments, diverts a substantial portion of the capital investments into the extractive industries, as the sinking of many new coal and ore mines and the like is necessary in order to meet the needs of the economy for coal, lumber and ore. The high degree of labor involved in jobs in the extractive industries results in the concentration of an ever increasing number of workers therein, increases the percentage of heavy and laborious jobs, because it is precisely in the extractive industries that conditions of labor are most difficult.

It would, in our opinion, be desirable in the future to provide for a more rapid increase in labor productivity in the extractive industry than in the manufacturing industry and thereby to bring about a reduction in the total number of workers in coal mining and lumbering. This would mean that in the upcoming seven-year plan the productivity of labor in coal mining should be raised by more than 23%, and in lumbering by more than 15%.

Labor productivity in 1957 was 226% of the 1940 level in industry as a whole, 128% in the coal mining industry, 176% in the petroleum industry, and 128% in lumbering. In recent years, the rates of increase in labor productivity have been rising in petroleum, lumbering and the production of electricity. However, in the coal industry, where no less than one-third of all the workers in the extractive industries in the USSR are engaged, the rates of increase in extraction of coal per worker remain quite low: 5% rise in 1954, 4% in 1955, 1% in 1956, 2% in 1957. This sharply diminishes the overall increase in output of products per worker throughout the extractive industries and does not make for a greater rate of increase in labor productivity in the extractive industries when compared to the processing industries.

In the USA, the productivity of labor in the extractive industries is increasing considerably more rapidly than in the manufacturing industry. From 1941 to 1957, labor productivity in industry as a whole rose by 52%, whereas in the mining industry it rose by 148%. Moreover, from 1951 to 1957 the rise in industry as a whole was 23%, and in mining it was 55%. (8) However, unlike the USSR, the rates of growth in labor productivity in branches of the extractive industry in the USA have slowed down in recent years, and this has created favorable conditions for overcoming our lag behind the USA.

Of decisive significance in reaching the American level both in industry as a whole and in its individual branches is the introduction into production of the most progressive experiences, and the wide application of the suggestions of innovators. In order to study high achievements in labor productivity, there is no need to travel abroad. All we have to do is to turn to the experience of progressive workers here who have far surpassed not only the average, but on occasion the most advanced figures in the USA. Thus, although the average rate of sinking wells is 1082 meters per derrick-month (in 1957), progressive brigades have, depending upon the hardness of the rock, achieved 3000-6000 meters, or in other words 50-100% more than the American level. They have achieved these results with ordinary equipment by better utilization of calendar time in drilling. For example, whereas in 1955 non-productive time expenditures in drilling totalled 42% of all time (18% down time, 11% liquidation of emergency conditions, etc.), progessive brigades have reduced this total to from 5-8% (the American figure is 9%). Likewise, actual boring time has been increased to 50% and more as against an average of 11% for the USSR as a whole (in the USA it is 56%). The USA will be more rapidly overtaken and surpassed in production economic indices if backward areas of production are brought up to the level of the more advanced. This requires not only the development of the creative initiative of the masses in dissemination of advanced experience, but the mass-scale introduction of the methods of work of innovators as a compulsory matter through governmental channels.

Analysis of resources for increase in labor productivity in Soviet industry shows how enormous the possibilities available in our country are for catching up with the USA at a very rapid rate. The matter is not merely one of possibilities. The socialist economic system of the USSR will make it possible to convert this possibility into reality in the briefest period of time, as is testified to by the following comparison:

Rise in Industrial Labor Productivity	USSR	USA
1957 as % of 1913	950	228
1957 as % of 1928	774	181
1957 as % of 1940	226	152
1957 as % of 1950	164	123

The average annual increase in rate of productivity of labor is 2 to 3 times as high in the USSR as in the USA. Whereas in 1913, the level of labor productivity in our industry was only one-ninth that of the USA, in 1940 the spread was only 3 to 1 and today it is only 2 to 1. These convincing figures are counterposed by some American economists with the following sophistry: the matter is not one of rate but of volume of absolute increase; whereas in the USSR the rate is higher, nevertheless the productivity of Soviet labor is increasingly smaller than that of the USA, as the absolute increase in production due to rise in labor productivity is higher in the USA.

This kind of reasoning reminds one of the devices of the ancient sophists who asserted that Achilles would not overtake the turtle even though he moved very much faster. However, even this contrived argument has been knocked out of the hands of the bourgeois apologists by reality. At present, the absolute increase of production due to the annual increase in labor productivity is higher in the USSR than in the USA. The rise in production caused by an increase in labor productivity of 1% in the USA is about twice as great as in the USSR because of the greater volume of production. However, inasmuch as the average annual rate of increase in labor productivity in the USSR was 7.3% from 1951 to 1957, whereas in the USA it was 3%, the rise in production due to this factor was 20% higher in the USSR than in the USA. Now, each year brings a reduction not only in the relative but in the absolute difference between the levels of labor productivity in the USSR and the USA. In 1956, the level of labor productivity in Soviet industry will attain 75% of the present level in American industry.

If we assume that labor productivity in the years ahead will rise annually by 6-7% in the USSR and by 1.5-2% in the USA, the USSR will overtake the USA, even allowing for further increase in the latter, in about 15 years. The long-range fifteen-year plan for the development of the economy of the USSR might well pose and solve the problem of overtaking the USA not only in the productivity of labor for industry as a whole, but also in its most important branches.

Attainment of a Higher Level of Productivity of the Labor of Society Than Exists in the USA

The concept of "the productivity of the labor of society" has so many facets that one can hardly find any single economic index that would embrace it in its entirety. The index that most nearly characterizes it is production of national income per worker engaged in the output of material goods, changes in this figure serving to characterize the increase in productivity of concrete labor, savings in abstract labor and shifts in the distribution of the number of workers in branches of industry with different levels of value added to manufacture per worker. If we seek a complete characterization of the productivity of the labor of society throughout the national economy it is clearly necessary to employ data on the utilization of labor resources in society as a whole ("the elimination of useless work" as Karl Marx put it) and on the use value to society of the resulting products (the elimination of useless products) such as objects of luxury, advertising, etc.

The productivity of concrete labor in the USA is about 150-200 % higher than in the USSR over the national economy as a whole. Rates of increase in this indicator are considerably higher in the USSR. The average rate of increase for industry, construction, railway transport and agriculture from 1951 to 1957 was more than 60% in the USSR and only 20% in the USA.

If we take as our point of departure the annual rate of increase in labor productivity in the USSR, which is 6-7% in industry, 7-8% in construction, 5% on the railways and 9-10% in agriculture, the average annual rise in the productivity of concrete labor in the economy of the USSR would be 7.5-8%. In the USA, if we take an analysis of the dynamics of development hitherto as our point of departure, and consider that the period of large-scale replacement of equipment has come to an end, the average annual increase in labor productivity may be estimated to be: 1.5-2% in industry, 1.5% in construction, 1% on the railways and 1% in agriculture, whereas for the economy as a whole it is 1.5%. With these relative rates, the USSR will overtake the USA in level of productivity of concrete labor in the national economy as a whole within 15 years, and this will be accomplished in that 15-year period in industry, in 10 years in construction, and in 7 years on the railways. (9) The target figures for development of the Soviet economy from 1959 to 1965 envisage a 45-50% increase in annual labor productivity in total industry, approximately 100% increase in the collective farms, and a 55-60% increase in the state farms, a 34-37% increase in railway transport, and a 60-65% increase in construction.

Therefore, during the seven years immediately ahead, the level of labor productivity in railway transportation in the USSR will exceed the level presently achieved in the USA. The level of productivity in construction will come very close to that of the USA. The spread in labor productivity in agriculture will be reduced by a factor of 1.5-2.

An important role is played by a second factor, determining the productivity of labor. This is economy of abstract labor (reduction in consumption of raw materials, other materials, fuel, and wear and tear on tools per unit of production). This saving of labor makes it possible, with the same volume of social products to increase the volume of national income by reducing the expenditures upon replacement of means of production. It is due to this economy that the physical volume of the national income (in comparable prices) increases more rapidly than the social product. Thus, from 1951 to 1955, the physical volume of the national income of the USSR rose 71%, whereas the increase in the social product rose by only 65%. During the 5th five-year plan approximately 10-12% of the total national income produced per worker in the production of material goods was attained by economies in abstract labor.

The standards for consumption of raw and other materials and fuels are generally higher in the USSR than in the USA. This is because the raw materials are of poorer quality: higher ash content in coal, more coarse petroleum, lower metal content in the ore. In a number of other branches of industry, raw materials are utilized poorly due to a lag in equipment and techniques of production. In the USSR, the yield of light petroleum products is lower, and the unit consumption of fuel to produce each kilowatt hour of electric power is higher. The yield of alcohol per unit of raw material is lower, the amount of metal lost in the chip is greater, the amount of yarn required per yard of finished cloth is greater, the consumption of fuel per ton-kilometer

The level of production of concrete labor is higher in the USA than in the USSR
by approximately the following figures
(1957 data).*

Branch	output, USA as % of USSR	No. employed, millions		No. employed, USA as % of USSR	labor productivity, USA as % of USSR
		USSR	USA		
Industry	2 times	19	18	95	2 times
Construction	1.5 times	4	3.5	90	1.7 times
All transportation	2 times	5	3	60	3 times
Agriculture**	1.2 times	30–40	6–10	20–25	4-5 times
Total of these branches	1.6 times	56–68	32–37	55	2.5-3 times

*This table presents the ratio of man-year productivity in the USSR and USA. In man-hour productivity, the USSR lags behind the USA in industry, construction and transportation to a somewhat greater degree, as in calculating numbers in these branches of industry, the USA includes large numbers of workers engaged for less than a full work week (the semi-unemployed) whose inclusion causes the length of the work week to be about 40 hours. In agriculture, the lag of the USSR behind the USA when measured on a man-hour basis would be considerably less, or approximately one-third of the American figure rather than one-fourth or one-fifth when measured on a man-year basis.

**The difference in labor productivity between the USSR and the USA is shown as about 4-5 times rather than 5-6 times, as would appear to follow from the tabular data. This is because people in agriculture spend a considerable portion of their time in our country in construction and in industry, whereas in the USA these branches of the economy are more sharply separated from agriculture. The numbers for agriculture are given both as annual averages (the lower figure) and as a maximum (the higher figure). Each individual in Soviet agriculture provides farm products to 5 or 6 persons in the total population, whereas in the USA he provides it for 20 or 25 persons.

of transport is greater. Therefore the level of cost of production (the consumption of abstract and concrete labor to produce unit output) is lower in the USA than in the USSR over a larger list of products than is the case the other way round, and is lower not only because laboriousness is less, but also because the outlay of labor previously expended is smaller.

Whereas the Soviet Union lags behind the USA in standards of consumption of raw materials and other materials, it greatly surpasses the USA in indices representing the utilization of means of labor. The equipment is used to a greater degree in the USSR, and the underemployment of productive capacities which is characteristic of capitalist society is lacking here. For example, on the Soviet railroads, the load carried per kilometer of track is more than 3 times as high as in the USA.

The rates of economy of abstract labor are considerably higher in the USSR than in the USA, and therefore the American standards of consumption of raw and other materials will quickly be attained and surpassed. During the fifth 5-year plan, the rates of consumption of raw and other materials, of fuel and electric power dropped by about 10% in industry. The reduction from 1959 to 1965 will be even greater.

A third factor in increasing the productivity of social labor is the change in the structure of the number of workers engaged in material production. Here we are speaking primarily of the distribution of workers between industry and agriculture, inasmuch as in the USSR and the USA more than 85% of all the workers in the area of production are engaged in these fields. Due to the difference in the level of skill and the intensity of labor of the workers, the level of social productivity of labor (output of net products per worker) is approximately twice as high in industry as in agriculture. (10) Consequently, the higher percentage of industrial workers in the total number of persons engaged in production of material goods (50% in the USA and 30% in the USSR) increases the level of productivity of the labor of society in the USA by about 10% over that in the USSR.

The concentration in Soviet agriculture of a considerably larger number of persons than in the USA relates to backwardness in the level of productivity of agricultural labor. An increase in this level will have a major influence in increasing the productivity of the labor of society not only by raising the productivity of concrete labor but by changing the structure of the personnel engaged in the production of material goods. From 1959 to 1965, the number of persons engaged in industrial production within industry will rise by 20-24%, and there will be a reduction in the number of persons engaged in agriculture (due to the accelerated rise in the labor productivity in the collective farms). As a consequence, the productivity of the labor of society will rise by about 6.5% in the course of the 7-year plan.

The Soviet lag behind the USA in terms of the level of productivity of social labor due to the 3 factors we have listed—the productivity of concrete labor, economy of abstract labor, and distribution of the number of workers through the branches of material production—is to be explained by historical factors: the backwardness of Czarist Russia and the severe consequences of two world wars. However, the USSR is considerably ahead of the USA in rates of economy of concrete and abstract labor. The national income of the USSR rose by 102% from 1951 to 1957, or by an average of 10.6% per year, whereas in the USA this rise was 25%, or 3.2% on the average per year.

The USSR enjoys an advantage in a number of other factors as well, among which we must note first, the elimination in the USSR of labor that is of no value to society, which Karl Marx included in the concept of the social productivity of labor. He wrote: "From the point of view of society, the productivity of labor increases as does economy of labor. The latter includes not only economy of means of productio but elimination of all useless labor. Whereas the capitalis means of production compels economy at each individual enterprise, its anarchistic system of competition induces a limitless waste of the means of production of society and o its labor force, and gives rise to the multiplicity of functio which are today indispensable although, by the nature of things, they are superfluous."(11)

The socialist economic system is free of periodic crises of overproduction and their consequences: reduction in out put, destruction of a portion of the products already manufactured, shutdowns of plants and equipment, a sharp reduction in the number of persons employed, all of which means an incalculable waste of the labor of society (abstra and concrete).

The socialist system does away with all labor that is useless to society and has arisen out of the anarchistic laws of capitalism. In commerce and the financial and credit apparatus of the USA, an enormous number of employable persons are engaged in labor having to do with the changing hands of capital values and changes in their forms. The enormous number of persons engaged in the inflated govern mental apparatus of the USA is due to its bureaucratization and militarization. In this connection it should be observed that not only the absolute number but the share of persons engaged in commerce, financial-and-credit and government institutions is increasing rapidly in the USA as it is in the other capitalist countries. Whereas in 1910, these branches of the economy employed 4 million people, or 12% of the total engaged in the economy, in 1956 they employed 21 mil lion people, or 32%, in the USA. In the USSR, on the contrary, the percentage of persons engaged in commerce, financial-and-credit activities and government employment has been reduced from 11% in 1913 to 7% in 1956, and the number of persons in the operation of government is being reduced not only relatively but absolutely. The socialist system does away with the production of a product that is unnecessary to society—advertising, which is produced by competition and whose purpose it is to facilitate the extraction of additional profit. It also does away with objects of luxury for the bourgeoisie. For example, in the USA expenditures upon advertising come to more than 10 billion dollars per year, and the cost of luxury comes to about 31 billion.

These advantages of socialism over capitalism in the field of the productivity of the labor of society will enable us to overtake the USA in the production of the social product and in national income per head of population in an abbreviated period of time. At the present time, the volume of the social product and the national income in the USSR are lower by a factor of approximately 1.6-1.8 than in the USA, and per head of population, they are 50%. If we take as our point of departure the annual average increase in social product of national income in the USSR where it is 8%, and in the USA where it is 2-3%, the USSR will overtake the USA in gross total product and national income within 10 years, and in production per head of population within about 12 years. In order to overtake the USA in productivity of concrete labor, it will, as we have seen, require some 15 years. In standards of production per head of population our country is rapidly overtaking the United States, despite the greater percentage of children and students in the USSR than in the USA, a factor that reduces the number of employables in the total population. This is possible thanks only to the superiority of socialism in terms of the productivity of social labor.

Successful fulfillment of the 1959-1965 7-year plan will substantially advance our country in the solution of its major economic objective, on the solid foundation of an accelerated rise in labor productivity.

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(1) In expanded form this formula takes on the following appearance:

$$\frac{\text{volume of output}}{\text{population}} = \frac{\text{volume of output}}{\text{No. of workers in material production}} \times \frac{\text{No. of workers in material production}}{\text{population}}$$

(2) Calculated from data in The USSR in Figures, 1958, pps. 7, 309, 313; Statistical Abstract of the United States, 1957, pps. 5, 203, 205. In the given instance, industry, construction, transportation and agriculture are categorized as branches of material production, as it is only in these branches that a comparison is made between labor productivity in the USSR and the USA.

(3) Voprosy Truda, No. 1, Profizdat, 1958, p. 122. In the United States, primary production workers represent about 70% of the whole, and auxiliary workers about 30% in manufacturing industry. Approximately 30% of the total number of auxiliary workers are engaged in transport operations, 20% in inspection and testing, 15% in mechanical repair and construction maintenance, 7% in power, etc. (Factory Management and Maintenance, No. 9, 1957).

(4) F. E. Dzerzhinsky, Fundamental Problems of Economic Upbuilding of the USSR, 1928, pps. 206-207.

(5) Calculated from data in Promyshlennost USSR, 1957, p. 24; The Handbook of Basic Economic Statistics, No. 10, 1958.

(6) USSR v Tsifrakh, 1958, pps. 59, 79; The Handbook of Basic Economic Statistics, No. 10, 1958, p. 54.

(7) The working of seams by short faces has a number of advantages: a) the percentage of the workers directly engaged in the recovery of coal is greater: in the USA about 1/2 of all the mine workers are at the face, and in the USSR it is only one-third; this alone causes the level of productivity in the American mines to be 50% higher than that in the USSR (the productivity of the labor of the workers at the face itself being equal); b) the labor productivity of the workers at the face is increased because the possibilities for the mechanization of labor are greater; there is a saving of labor in the installation of supports and in preparatory jobs.

(8) Calculated from data in the Handbook of Basic Economic Statistics, No. 10, 1958, pps. 24-25, 33, 53-55, 73.

(9) In transportation as a whole the USSR lags behind he USA to a greater degree than in railway transport. The total freight turnover in all types of transport is approximately twice as high in the USSR as in the USA and his is accomplished with a smaller number of workers 5 million in the USSR and 3 million in the USA). The hree-fold difference in labor productivity in Soviet and American transport is due primarily to the higher percentage of water and pipeline transport in the total rate of urnover of the USA.

(10) It is impossible to make direct comparison of data on net output per worker in industry and agriculture, as under the existing system of price formation the share of agriculture in the national income (23% in 1955) is understated, and that of industry (54% in 1955) is overstated. The figure presented in the text is obtained by determining the coefficient for reducing complex and heavy labor to simple and easy labor in agriculture by conversion of labor-day units to man-days, whereas in industry it is achieved on the basis of the mean scale factor and the coefficients of difficulty of labor. In the USA the net output per person engaged in agriculture is only 40% of that in industry (factors having to do with redistribution of income also play a role here).

(11) Karl Marx, Capital, Vol. 1, p. 532 (Russian edition).

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V. Kriazhev, M. Markovich:

The Time Budget and Measures to Improve the Living Conditions of the Working People

The Communist Party and the Soviet government are manifesting great concern for the well-being of the people. The target figures for the development of the economy of the USSR for 1959 to 1965 state that the real incomes of workers, office workers and collective farmers are to rise by an average of 40% per worker during the seven-year period. Measures have been outlined and are already being carried out to improve the cultural and living standards servicing of the population. As compared to the preceding seven years, the sale of refrigerators, washing machines and equipment, sewing machines, vacuum cleaners, electric floor polishers, electric irons and other household equipment easing the woman's tasks in the home will multiply several-fold.

Public eating facilities will be greatly expanded. The production by enterprises in this business will more than double during the seven-year plan, and the prices will be reduced. Proceeding from the instructions of the 21st Congress, the Central Committee of the Communist Party of the Soviet Union and the USSR Cabinet have adopted a special resolution "On the Further Development and Improvement of the Restaurant Industry." The resolution envisages an increase of 64,300 enterprises, with 3,100,000 total seating capacity, in the network of public eating places maintained by the government and the cooperatives. In the course of 1959-1961, all enterprises in the public catering industry will be converted to the use of semi-prepared materials, the present pricing system will be changed, there will be a considerable improvement in their heating and cooking equipment and in transport. Progressive forms of service to the population will come into wide use: sale of meals to take out, advance sale of subscriptions and tickets for breakfasts, dinners and suppers, etc.

The improvement in the household services to the population will be facilitated by the expansion of the public catering enterprises, stores and stalls, tailoring and clothing repair and shoe repair stores, laundries and other enterprises. In March of this year, the CC CPSU and the USSR Council of Ministers published a resolution on "Measures to Improve Household Services to the Population." Under this resolution, it is proposed to open, in a three-year period, 29,000 new tailor shops, 12,000 new shops to repair household goods, as well as for apartment maintenance services. 267 dry-cleaning and dyeing plants will be built. With the object of increasing the productivity of labor of workers in service industries, of reducing the costs of the work and of creating the greatest possible conveniences for populations of large cities, mechanized shoe, furniture and consumer durable repair shops will be established with an extensive network of pick-up outlets that will also perform minor repairs on a while-you-wait basis. The Councils of Ministers of the constituent republics, the krai executive committees, the oblast executive committees, and the city councils will take measures to bring about a further reduction in the prices charged for tailoring and household and repair services. The working hours and the weekly days off of household service industries will be set to create the maximum convenience for the population.

Care for children in the family and their upbringing constitute an important aspect of the life of the working people. During the seven-year period, many boarding schools, kindergartens, day nurseries, and Pioneer camps will be opened. New construction will result in an increase in day nursery space 150% faster than during the preceding seven years. The improvement in the housing situation will be accompanied by improved conditions for recreation, cultured spending of leisure time, reading, and activities relating to improvement of education. It is planned that housing to a total area of 650-660 million square meters is to be built from 1959 to 1965 out of government investments and the savings of the population.

Improvement in the living conditions of the working people is of immense importance to the national economy. Living conditions have a significant influence upon the level of labor productivity. Excessive housework and inadequate rest do not facilitate complete recovery of the strength expended on the job, and this reduces the worker's working capacity. Therefore, a further increase in the productivity of labor in industry and other branches of the economy is directly related to the measures to improve the material and household conditions of the working people.

There are various indicators providing a statistical picture of the living conditions of the working people. Thus, the degree to which the population is served by public enterprises is measured by the ratio of the population employing these services to the entire population. The same method is used to calculate the index of the availability to the population of consumer durable goods. However, the overall index descriptive of the status of the working people's living conditions is the time budget, and, in particular, the utilization of time after the completion of the work day on the job.

A study of the working people's time budget makes it possible to determine the amount of time to be spent on housework: on the purchase and cooking of food, on the upbringing of children and looking after them, on house cleaning, on care of clothes (washing and ironing, repair and patching, sewing one's own clothes, etc.). A study of families possessing consumer durable goods and making use of the services of household and other service institutions demonstrates the amount of time they save by comparison to families that do their housework by hand and that do not employ the services of government service institutions. An investigation of the time budget of the urban and rural population is necessary in order to demonstrate the difference in time expenditures for particular types of housework. A study of the time budget is also important to determine the amount of time spent upon sleep and other forms of recreation, upon sports, upon civic activities, etc. The distribution of time in the course of the day will show which hours of the day are employed to perform particular types of housework, and when working people take their rest. Data of this type make it possible to establish the hours and procedure of service enterprises more accurately as well as that of merchandising, restaurant, and cultural and educational institutions.

The time available to the production worker each day m be divided into three parts: that devoted to work on the job, that after working hours, and sleep. The time for wo on the job is determined by labor law and is one of the triumphs of the October Revolution. The development of the productive forces of socialist society creates conditio for a further reduction of the length of the work day. In accordance with the resolutions of the 21st Congress of th CPSU, it is planned to transfer all working people and office workers to a seven- and six-hour working day by 1962. In 1966-1968, there will be a further reduction to a 30-35-hour working week, with a single day off, which means the introduction of a five- and six-hour work day. The USSR will have the world's shortest work day and the world's shortest work week.

Reduction in working time will mean an increase in the number of hours free of work. However, life demonstrates that all after-work hours are not employed for recreation. Therefore, in addition to the measures to reduce the working day on the job, it is necessary to study and to spell out in further detail the measures outlined in the target figures for improving the living conditions of the working people, for reducing the time spent on housework, and for providing in this way, along with other steps in this direction, for an increase in the well-being of the Soviet people. In this connection, it would be desirable for the Central Statistical Administration to organize a scientific and extensive study of the time budget of the working people. The result of such a study would make it possible to revea on the basis of very large-scale data, not only the general structure of the time budget of the working people, but factors defining differences in the expenditure of time by different strata of the population.

Studies of the working people's time are quite unique ar have little in common with ordinary budgetary statistics. The employment of answers to questionnaires will not serve the purpose. What is needed is a highly consistent recording of expenditures of time starting with the momen of awakening (in the morning for first-shift workers or in the afternoon for second-shift workers). In making such a study, the unit to be observed should be the family. The following are the reasons for this. On the job a man functions in cooperation with other working people. At home, h functions in the family (and single people function in dormitories) also on a basis of cooperation. The time expenditures of an entire family cannot be regarded merely as the sum of the time expenditures of its members. Here a division of functions is inevitable, particularly in cases in which certain of the members capable of working hold factory or office jobs, and others work at home. The structure of the time budget itself varies from individual to individual in accordance with the special features of the time budget of other members of the family. A childless housewife is one thing and the mother of school-age childre is quite another. When families share an apartment, this also involves a certain level of cooperation in the housework and some division of labor among the families.

Selection of persons to be studied at their work places should be performed as follows. In each department of each enterprise, some single and some family people shoul be chosen, as should people with different levels of income, men and women of different skills, in such proportions that the selection will be a fair sample of the total. To accomplish this, methods should be developed for the selection of families to be studied that will guarantee that the group selected will be adequately representative of the entire unit under study. The sample should include the same proportions of families or groups of workers in this enterprise that these definable groups constitute in the whole, i.e., the sample must be proportional. Such a selection must be preceded by a rounded analysis of the phenomena to be studied, on the basis of Marxist-Leninist theory. After families have been chosen for study, a careful check of the degree to which the sample is representative must be made.

For example, the sample should contain, in appropriate proportions, single workers, family men and women, people with and without children, those living in new houses with all conveniences and those in old houses lacking such conveniences, people living close to and far from their place of work, people possessing consumer durable goods and those not possessing them, workers whose children are in kindergartens and day nurseries and those whose children are at home, etc. All these characteristics have a direct influence upon the time budget of the working people.

The question arises as to the period of time for which the study of the non-working time of the working people should be made. We believe that the time budgets of workers as well as of other categories of the people should be studied over a two-month period: one a summer month and the other a winter month, as the structure of the non-working time of the working people during the summer differs from the structure of the time budget in the winter. In summer, working people send their children to Pioneer camps. Consequently, the time spent in looking after their children is considerably reduced. Theatres and movies are attended more frequently during winter. Summertime, people spend more time in parks; many travel out of town; some live in country cottages; etc. The study of the time budget of working people during their vacations, and on holidays and days before holidays, is of particular interest. In order for the collected data to be adequately representative of the country as a whole, the time budget has to be studied in various sections of the country, and both in cities and the rural areas.

Data available to the Labor Research Institute on the time budget of workers in a number of industries in Moscow, Leningrad, Tbilisi and Pavlovo-Posad for 1958 provide some basic idea of the structure of the time budget of working people. When these data are compared with similar data obtained from studies in the 1920's, it becomes clear that the structure of the time budget of working people has undergone a fundamental change during this period as a result of the social and economic transofrmations that have occurred in our country and of the cultural revolution. Whereas, in the 20's, when the traditions of the old way of life were still strong, a certain number of the workers, particularly in light industry where female labor predominates, spent a portion of their time attending church, performing religious ceremonies, telling fortunes at cards, and in household handicraft, etc., today this form of time expenditure no longer exists. Instead, workers frequently go to the movies, the theatre, concerts, lectures, and clubs, educational institutions, and participate in physical culture and sports. However, working people, particularly women, still spend much time on housework.

The Labor Research Institute studied the time budget of workers in a number of industrial enterprises in 1958 so as to learn about the household life of the working people. In this study, particular attention was given to the time budget of women working in industry. The first such study was made in Moscow, at the "Red East" knitted goods factory, where 47 working women and nine families were investigated. The second was made in Tbilisi in six industrial enterprises: 52 persons were studied at a silk mill, ten were studied at a tea-packing plant, eight at the Kalinin machine shops, ten at the Kirov machine tool plant, five at bakery No. 1, and two at tannery No. 1. All told, 87 persons were embraced by the study in Tbilisi, among them 70 women and 17 men. By occupation there were 68 workers, 15 office workers, and 4 engineers and technicians. The third study was made at a textile mill and a yarn and thread mill in Leningrad, where 127 workers were studied of whom 50 were women and 77 were members of family units. The fourth study was at a worsted mill in Pavlovo-Posad, where 70 working women were studied.

The method of recording time expenditure eliminated duplication, and therefore the indices for certain aspects of the budget do not reflect all the time spent for particular purposes. For example, the column headed "Reading of Magazines and Books" does not include time spent reading while traveling, although we all know that many people, particularly those who live out of town, use their travel time for reading. The column "Care of Children" records only the time spent specifically for this purpose, for example, walking an infant or assisting school-age children with homework. Every other type of child care (washing the children's clothes, making food for the children, etc.) is hard to separate into a special category of time expenditure, as it falls into other portions of the time budget. Therefore, the data on the column "Child Care" is understated.

The objects of study were days, a weekday, Saturday and Sunday. This method of investigation made possible the most complete consideration of time expenditure only on those types of housework and recreation that are engaged in daily. Time spent on the washing of clothes, and of floors, repair to clothing and other housework, which is not done daily, was calculated for a single instance, i.e., only for those who happened to engage in this type of housework on the day studied. The same holds for time spent attending movies and theatres.

According to this data, women workers with families in Moscow and Tbilisi spent approximately three hours on housework, on the average, seven hours on sleep, and 40 minutes to one hour riding or walking to and from work. Among the various types of housework, the highest percentage of the time (over 36%) was occupied by cooking and washing the dishes. The data showed that the second-ranking type of housework, in terms of time expended, was care of clothing (washing and ironing, sewing, patching, etc.). This type of work took 20% of the time expended upon all housework. About 17% of the time expended upon housework went to taking care of the living quarters (dusting and washing floors, making beds, etc.).

Time Expended by Working Women with Families on Housework (in percent).

Number of hours	Leningrad	Tbilisi	Pavlovo-Posad
Less than one	9	15	—
1-3	15	24	7
3-5	26	36	18
Over 5	50	25	75
Total	100	100	100

The table shows that 76% of the working women with families spent more than three hours per day on housework in Leningrad, 61% in Tbilisi, and 93% in Pavlovo-Posad.

Many working women spent some time during the day of the study reading literature, newspapers, magazines, watching television, listening to radios, sewing, etc. The following table shows how much time was spent by working women on the average during the given day on various types of recreation:

Type of recreation	Moscow	Tbilisi
Reading newspapers, magazines and books	1 hr, 39 min	1 hr, 43 min
Watching TV and listening to the radio	1 hr, 55 min	2 hr, 22 min
Needlework	2 hr, 05 min	1 hr, 04 min

The time spent upon housework, sleep and recreation depends upon various factors: upon the family situation and the composition of the family, upon sex and age, upon the availability of conveniences in the living quarters, upon whether laundries, children's institutions, or public eating places were utilized, and upon whether the family possessed consumer durable goods facilitating housework.

The major characteristic determining the time budget of working people, particularly that of women, under today's conditions, is the family situation. The following groups may be identified: single persons, childless families, families with grown children, families having a single infant in arms, with a single child over one year, with two children over one year, etc. The greatest household burden falls upon working women having infants in arms. Where there was one such child, the time thus required was six hours per day, of which five hours went for care of the infant. Single individuals spent only one hour on housework. The considerable load of housework borne by working women with infants in arms reduces the time available to them for rest and sleep.

The time expended by working women after their day on the job was over was substantially different from the time spent by their husbands. Women spend about three and a half hours on housework, and men about an hour and a half.

Data on the distribution of time in the course of the day is also of practical interest. Data on a number of industrial enterprises in the city of Tbilisi show that the majority of women sleep from 11 p.m. to 6 a.m., and that their working day on the job is usually from 7 a.m. until 4 p.m., including one hour for lunch. Working women are engaged in housework primarily from 5 to 9 p.m. The first hours after work are usually spent in buying foodstuffs. Women working on the first shift do some of their housework in the morning.

Data of the Chief Administration of Housing of the Ministry of Urban Services of the RSFSR confirm that the woman who does not own machines and tools to ease her work spends much time and physical effort in serving her family. The labor spent in performing housework, including the utilization of public enterprises for a family of three or four people, is about 270 hours a month, on the basis of a sample calculation derived from test data. The following table shows the types of work on which this time is spent:

Work	Hours per month	% of total
Washing clothes	18	6.7
Drying clothes	6	2.2
Ironing clothes	15	5.5
Total	39	14.4
Cleaning	30	11.2
Washing (and waxing) floors	6	2.2
Total	36	13.4
Cleaning clothes and putting things away	24	8.9
Repairs to living quarters	3	1.1
Cooking	78	29.0
Dishwashing	30	11.2
Other, including purchasing	70	22.0
Grand total	280	100.0

Housework is participated in to a greater or lesser degree by all adult members of the family, and also by scho age children. Therefore, the total time expenditure upon various types of housework is comprised of time expenditures by all members of the family. However, the distrib tion of time among adults is characterized, on the one han by the level of consciousness and the upbringing of the youth in individual families.

The following conclusion may be drawn from an analysi of the data available at the Labor Research Institute: a fu ther increase in the assistance given to working women is necessary; a maximum easing of the burden of household work upon women is needed, as it has a negative effect up their recreation, sleep, cultural development and upon the upbringing of their children.

According to the data of the State Planning Committee of the USSR, the urban population of the RSFSR possesses approximately 300,000 home washing machines with a capacity of three and three quarters to five pounds of dry wash each. These machines service a total in excess of 1,000,000 persons. With the aid of these machines (requiring separate heating of water and hand wringing), the time expended by the housewife on washing clothes at hom can be reduced by two-thirds when compared to hand wash ing. In the future, in addition to increasing the output of the "Riga-55", the "Urals" and other washing machines the output of machines of improved design, with automatic features, has to be introduced. An automatic washing machine can heat the water to 40°C while soaking the wash can bring the water temperature up to the boiling point during the washing process, then change the water three times during rinsing, and, at the end of the process, wring the wash out to a semi-dry state. This type of washing machine reduces the housewife's work in washing to one-tenth or one-fifteenth of that required for hand washing. Thus far, industry is not manufacturing ironers, which are capable, for example, of pressing trousers in five minutes These machines are small in size and reduce the time required for ironing to less than one-fourth of that required by hand work. Mass utilization of this type of equipment for washing at home would make it possible for women to save 10 to 13 hours per month.

It is also necessary to start mass production of other types of household machines of modern design. These include family-size dishwashers, vegetable shredders, potat peelers, blenders, juicers, powered brushes for cleaning walls, windows, floors, etc.

The retail prices of household machinery and tools can be reduced by reducing their cost. The high cost of household equipment is to be explained to a considerable degree by the fact that they are not manufactured by specialized industries, but by departments of other industries or by small enterprises of locally-controlled industry. Organization of production in this fashion inhibits the introduction of the latest models of machines. Large specialized plants are needed to manufacture washing machines, refrigerator vacuum cleaners, and other household equipment. At present, a washing machine with mechanical wringer and a pump for discarding the water is going into production. To reduce the weight of washing machines and cut down the employment of stainless steel, of which there is a shortage drums of stainless steel will be replaced by drums of anodized aluminum. Maximum utilization of plastics and other chemical substitutes for metals is envisaged in the design of these machines. These measures will make for a reduction in the cost of washing machines. It is planned to launch serial manufacture of the most modern household equipment in 1959, including 175-liter household refrigerat rs; electrical washing machines with centrifugal operation and timers, family-sized potato peelers, blenders, dishwashers, etc. By the end of 1965 every second or third urban family will have a washing machine.

In addition to increasing the output of household washing machines and improving their design, serious attention will have to be given to the increasing the number of laundries and improvement in their services. Today, more than 70% of laundry work is done by hand, for example, the ironing of underclothes is performed in this manner. A single working woman cannot iron more than 25 T-shirts per shift, whereas four women using ironing presses can do a thousand per shift.

The labor expended by women in cleaning their apartments can be reduced by increasing the manufacture of and by large scale introduction of improved floor-polishing machines, small hand vacuum cleaners and general-purpose vacuum cleaners, including the rug-cleaning type. Household service businesses should establish units for washing and puttying windows, polishing and washing floors, and apartment houses must be equipped with plug-in vacuum cleaners.

The introduction of machines for cleaning the home will ease the labor of the housewife. Thus, for example, the polishing of floors with a floor-polishing machine requires only one third as much labor as when this is done without a machine. The all-purpose floor-model vacuum cleaner cuts labor by half as compared to cleaning by hand. When apartment houses are equipped with plug-in vacuum cleaners working off a central compressor, the time spent in cleaning the home can be reduced by two-thirds over hand labor. On the whole, the employment of mechanisms makes it possible to reduce house cleaning time from 36 to 20 hours per month, or by 45%, and when plug-in equipment is used, it can be reduced to 16 hours, or 56%.

In a family of three or four people, about 24 hours per month are spent on cleaning and small repairs to underclothes, mending socks and stockings and similar work. The expenditure of labor on the cleaning of clothes can be reduced by the use of electrical brushes and all-purpose vacuum cleaners. The time spent on minor repairs to clothing, darning socks and knit-wear, etc., can be reduced by the use of electrical machines for patching and restoring fabrics. Unfortunately, industry in our country does not manufacture electrical brushes and vacuum cleaners with attachments for removing dust in the cleaning of clothes, and machines for dyeing and re-weaving fabrics. The introduction of at least these mechanisms would ease and reduce the labor of women by 60%, reducing the time spent on these types of work to 10 hours per month.

According to the data of the Labor Research Institute, many family-size household machines are employed very unproductively. Machines such as vacuum cleaners, electric floor polishers, and washing machines are used only a few hours per month. A better form of employment of these machines would be the development of rental offices under the building superintendents. Calculations show that if merely one half of all the washing machines manufactured during the seven-year period were placed in laundromats, their utilization four hours each day would make possible the washing of all the clothing of the urban population, or in other words would completely free women from the hand washing of clothing. Moreover, a large-scale organization of rental services would make it unnecessary for working people to purchase household machinery.

The considerable amount of time spent in travel from the home to the place of work and return can be reduced by improved location of housing relative to industrial enterprises and by a simplification of the procedure of changing one's place of residence. Steps must also be taken to make sure that public transport facilities do not lag behind housing construction. Fleets of automotive vehicles must make wide use of selective studies of passenger flow so as to determine the peak hours and should employ their vehicles accordingly.

The above listing of measures for improvement of the living conditions of the working people is by no means complete. However, successful execution of these measures will facilitate the raising of the living standard of the people to a new and higher stage and make for a continuous rise in labor productivity in production.

REVIEWS AND CRITICISMS

Vestnik Statistiki — Journal of Statistics — No. 4, 1959

A. Boiarskii:

"Statistical Methods" by F. Mills

(Translated from the English, edited by Professor P. P. Maslov, Moscow, Gosstatizdat, 1958, 799 pages.)

One can only welcome the appearance in Russian translation of important works by foreign authors on problems of statistics. Judging by the number of publications brought from its presses in the very recent past, the Gosstatizdat has begun large-scale and systematic work in this direction. Soviet statisticians will also greet with interest the appearance in Russian translation of F. Mills' book "Statistical Methods," which has gone through several editions in the United States and Great Britain.

The book is organized into 19 chapters and a number of special appendices. After a very brief presentation in the first chapter of the author's general views as to the object of statistics, the volume proceeds, in the second chapter, to describe graphic expressions, and to the third, which is devoted to the technique of grouping statistical data. The fourth chapter begins the presentation of questions in the area of primary interest to the author — various indices and methods of analysis employed in statistics. The fourth chapter examines the various mean variables, and the fifth chapter the indices of variation and various characteristics of distribution. Finally, in the sixth chapter, the author undertakes to proceed from description of distributions to theoretical analysis thereof with the assistance of familiar patterns from probability theory. However, he does not proceed in this direction further than utilization of the binomial and normal distribution of probabilities, and reduces this problem, to a considerable degree, to the descriptive problem of calculation of moments.

Two chapters follow (seven and eight), dealing with the problem of statistical sureness, examined in the usual aspect of an estimate of a sample, common to mathematical statistics. The ninth chapter is devoted to measurement of connections. The usual scheme of linear correlation, and that of the correlation of ranks, is examined. Then there follow three chapters on analysis of dynamic series (or, as the translators have rendered it, in language more nearly approximating the original, "time series"). This problem is subdivided by chapters in complete accord with the concepts of the Anglo-American school that are dominant in this respect: the secular tendency, seasonal fluctuations, cyclic fluctuations. The two following chapters on indices (13 and 14), fall into the same category. Somewhat unexpectedly for the reader, they prove to be organized not on the basis of the general theory of the method of indices, but on the basis of examination of only three indices: prices, production, and the productivity of labor.

In Chapter 15, the author returns to distribution, and sets forth the criterion of correlation of Pearson. The 16th, 17th and 18th chapters again deal with questions of the measurement of connections: dispersion analysis, curvilinear and multiple correlation. In the 19th chapter the reader again encounters problems of sampling method.

The book contains much interesting illustrative material which not only clarifies the theoretical concepts set forth therein, but provides a certain understanding of the methods employed in statistical practice in the USA. Not infrequently, the presentation of some question begins by examining an appropriate specific example. This raises the reader's interest, and makes the presentation vivid an accessible to a given degree.

Although we take a positive attitude toward the very fact of the translation of Mills' book, we are, however, not in accord with certain of the propositions advanced by the pu lishers in the preface. According to the publisher, the Soviet reader will pass by those of the author's expressio that describe his theoretical standpoint. The reader's maj attention is directed to the technical apparatus of calculation, which, as is noted in the preface, is the strongest aspect of Mills' work. Is it true that there are, in the book under review, so many interesting technical devices not hitherto presented in our own literature, and moreover, nc infrequently with substantially greater completeness and rigorousness? If we omit certain details, not of great significance, with respect to measurement of seasonal fluctua tions, and some others, F. Mills' book provides the Soviet reader with virtually nothing new. The book does contain some information on the construction of a number of indices employed by American statistics, but this information is highly fragmentary and random because it was the author' intention to present it only by way of illustration. We believe that, in familiarizing himself with the book under review, the Soviet reader will pay particular attention precisely to Mills' theoretical positions, and his book provide a clear indication of how the most important representativ of the bourgeois science of statistics understand the principles of statistics, as to what their concepts are of the interrelations among its departments, with respect to the economic content of these indices, etc.

In this respect, Mills' book is most instructive. In the first place, the Soviet reader is struck with the fact that the approach to the definition of a method of constructing indices that runs through this book like a red thread is com pletely the opposite of that which has long since become the customary guiding principle with us. The book does not con tain a single word on the matter of qualitative analysis, or of the conventionality of the methods of measurement employed, or on the construction of indices of the properties c the objects of investigation or its qualitative nature. Instead of this, the book is permeated with the spirit of empiricism, which serves as the methodological foundation for the author's treatment of all problems.

For example, the chapter on means speaks of methods of calculating various types of means, but there is not a single word on the fact that in choosing one or another type of mean, one must proceed from the objective economic conte of the phenomena and processes under study. The author cannot, of course, completely avoid in silence the problem of the principles by which means are selected, and he demonstrates to the reader, very early, the existence of a number of varieties thereof. But here is a striking example of the solution suggested. On page 107 we find posed the question as to when, precisely, the geometric mean should be employed, and when the arithmetic. We find that the latter should be employed "if the absolute numbers applied to the rithmetic scale yield a completely symmetric distribu- ion...". However, when the absolute numbers that apply to he diagram yield an asymmetric curve, and moreover one f such a type that if the logarithms are employed instead f the numbers themselves, the asymmetry of the curve is liminated, then the geometric mean is to be preferred. Pages 107-8) So it appears that the problem is solved not y the qualitative nature of the object under study, but by he visual appearance of the distribution curve. Or here is nother characteristic line. Inasmuch as the external ap- earance of the distribution curve cannot serve as the oundation for a precise reply, the author's reasoning, as s always the case with empiricists when they encounter uch situations, becomes highly diffuse ("more to be pre- erred" — this is all that he can say).

The same empiricism is clearly evident in the presenta- ion of methods of plotting indices. The author attempts to olve the entire problem of indices by basing himself wholly n the profoundly formalist theory of I. Fisher, which has lready been subjected to detailed criticism in the Soviet iterature. In essence, the chapter on price indices is noth- ng more than a brief summary of Fisher's book "The Plot- ing of Indices," which is quite familiar to the Soviet reader rom its Russian translation that appeared in 1928. This hapter examines various formulas for indices. They are hen subjected to formal tests with respect to time con- ertibility and the convertibility of factors. After it is found hat it does not satisfy any of these conditions, the author akes refuge in the notorious procedure of "crossing," and s a result gets the familiar "ideal" formula of Fisher. From these positions, the formulas of aggregate indices, hich alone can provide a correct reflection of economic eality, are replaced by a meaningless square root of their roducts. This is truly an "ideal" reflection of the most rrant formalism.

Mills is true to himself in his treatment of the problem f the measurement of connections. As we know, in the neasurement of connections, the methodological principle f qualitative analysis is reflected in the selection of the ype of curve that describes the relation. For example, in neasuring the relation between cost and the volume of out- ut of a product, the analysis of this relationship logically eads to a hyperbola (although, with small reservations, a mall segment thereof may be roughly described as a seg- nent of a straight line), and in measuring the relationship etween the cost of transportation of a warehouse and the adius to the points of sale served, it leads to a cubic parab- la, etc. These problems are solved by Mills in a different ashion. The sole argument for transition from the linear orm of connection to a curvilinear parabolic form is, for im, the external appearance of the curve determined either y eye or by means of appropriate empirical "criteria" op. 589-590).

It is characteristic of empiricism that methods developed o study certain phenomena are applied to others, complete- y different in content, on the basis merely of an external imilarity. Thus, an attempt is made to apply Gauss' nor- nal distribution curve to a description of the dynamics of pidemics (the curve of which has nothing whatever in com- non with the distribution of frequencies in general) or, to escribe the dynamics of the growth of plants (to accomplish hich it is necessary to cut one half off the normal curve nd then reverse it!). In studying the mortality rate of the opulation on the basis of specific, albeit primitive con- epts, determination of the line for life expectancy relative o age was based, at one time, on the Gompertz-Makehm ormula. Mills, however, takes advantage of a purely ex- ernal similarity to propose that this formula be applied to describe the dynamics of a number of economic phenomena whose laws have, quite obviously, absolutely nothing in common with the regularities of change in mortality relative to age (page 759). Thus, he employs the Gompertz curve to investigate the dynamics of shipment of staple fiber yarn. Efforts to reason behind this analogy are on no higher a level than efforts to sustain the application of Gompertz' curve to describe the development of epidemics.

The presentation of methods of studying the business cycle is performed in this book in complete isolation from any economic theory whatever.

A lack of a valid guiding concept leads to defects in determining the limits of a course in statistics and the structure of the book. The question of the object of statistics is given, all told, a couple of pages, filled with diffuse and random material, and what is defined is not the object of the science but that of the given book. The book has no chapter whatever on statistical observation. The structure of the book is, in general, confused. Thus, questions of measurement of relationships are examined in a number of different places: first in the ninth chapter, and then again at the end of the book in chapters 17 and 18. Sampling is examined in chapters 7 and 8, and again in Chapter 19, etc.

The book begins with a presentation of problems that are highly important but in no sense points of departure for the theory of statistics. Thus, methods of graphic representation are set forth at the beginning of the book. Is this not because curves and their visual appearance will be then called upon to substitute for analysis of the economic nature of phenomena? The reader will find in this book a chapter on groupings, but he will immediately be convinced that the theory of groupings does not even make an appearance here, as the whole business is reduced to distributions. There was, of course, a time when our curricula also strove to merge the theory of groupings and the theory of a variation series, but experience showed that problems of groupings and mathematical methods of studying variations cannot be merged in any formal fashion, but must be examined as two independent problems. However, in the light of the general approach characteristic of Mills and other bourgeois statisticians to the problem of statistical methodology, no other "theory" of groupings other than the presentation of methods of compilation and mathematical investigation of variation series is required.

Although the author makes many references to the "regularities," "stabilities," etc., which are revealed in mass statistical data, he clearly avoids any reference to the law of large numbers. Thus, in setting forth the binomial distribution and in adducing a formula for its dispersion in the transition from absolute to relative frequencies, the author does not find it necessary even cursorily to recall the initial formulation of the law of large numbers in the form of Bernoulli's theorem. The author does mention the Chebyshev theorem, but only in fine type as something of secondary significance. The major content of the theorem is passed by in silence and is reduced, in essence, to the external description of distributions.

This fear of the law of large numbers flows, in the case of this author, not at all from a negation of a probabilistic treatment of statistical methods. On the contrary, Mills holds that the concept of probability lies at the very basis of the theory and practice of modern statistics (page 138). The concept that every statistical index is a sampled index opposed to an index of "general totality" runs through the book like a red thread. The Soviet reader will well understand the inapplicability of this probabilistic treatment of statistics as a science. It is, in point of fact, related to a negation of the real foundation of a statistical study of social phenomena — analysis of their qualitative nature. Thus, Mills does not avoid references to the law of large numbers because, in the matter of the subject area of statistics, he takes a position in any way different from those of other bourgeois statisticians. The reason is quite different. The point is that he strives to take some intermediate position between the classical analysis of probability and its analysis due to von Mises. The influence of the latter is particularly clearly manifested in the fact that the position that should be occupied by the law of large numbers is replaced by "the statistical verification of hypotheses." However, Mises' analysis of probability cannot at all be deemed to be progressive, a fact that was duly noted at the time in our literature. In accordance with this approach, probability does not actually exist as a category in the objective world, but is replaced by an empirical frequency limit. In this connection, the law of large numbers itself is transformed into a simple tautology, and therefore, any need for this law disappears. The weakness of this position is very easily revealed. This is why Mills, in order to justify the possibility of estimating a sampling with the aid of the index of fluctuation, which itself is found on the basis of sampled data, is compelled nonetheless to resort to a reference to the law of large numbers: "...thanks to the subordination of curves to the law of large numbers, we find ourselves in a position to employ data obtained by sampling to generalize the results derived from sampling" (page 194). This recognition is not made in too intelligible a fashion, but this is more a fault of the editors of the translation.

In accordance with the author's general concept, the reader is also unable to find, anywhere in the book, a clear explanation of what is to be understood as the mysterious "general totality" (aside, of course, from the presentation of the method of sampling as such, presented in the 19th chapter). This question, which deals, as the reader will see, with that which is fundamental in the conception of the author of this volume, is one to which he returns repeatedly in virtually every chapter of his extensive book, but this does not make matters any clearer. The probabilistic foundation for the sampling method as such, and the role of the law of large numbers in analysis and utilization of statistical indices in general, can become clear only on the condition of a materialist understanding of the very category of the accidental, and consequently of probability and everything related thereto.

The essence of the difference between the treatment of this problem by Mills and a real scientific materialist treatment may be explained by means of the following example. We cannot deny that if a new drug has been used only in five cases of any given illness and has yielded positive results in all these cases that, in order for a final judgment to be arrived at, a larger sample must be tested for purposes of confirmation. However, this is not at all explained by the fact that, in addition to these five cases, there is also some infinite "general" totality of cases of treatment by this drug. The explanation is actually much simpler. Cases of treatment with the given drug actually totalled only five in the entire world, but human beings capable of falling ill with this disease and, if that occurs, being subject to treatment with this drug, are very much larger. And inasmuch as the five specific cases in this instance constitute a negligible sample, which by its characteristics may sharply differ from the average characteristics of this entire general (and in this case we won't put quotes around it) totality, the result of their cure does contain an element of the random. This element will be the smaller, the larger the number of cases in which the given treatment is employed.

Thus, Mills' book clearly shows the profound difference between the materialist and idealist treatments of the fun mental theoretical problems of statistics. With regard to the usefulness, to the Soviet reader, of material on specia problems of processing of statistical data, although, as w repeat, the book contains little that is new, its presentatio is, in many instances, masterful. Thus, in the literature hitherto published in the Russian language, the Soviet rea er will not find so simple and clear a presentation of dispersion analysis as will be found in Mills' book.

The translation of the book is not free of error. In orde not to load down this review, let me cite merely one example in addition to those noted above. Page 427 speaks c the maximum value of the mean, which any reader will understand as the maximum value, but what is meant is actually the greatest significance. There are a number of other similar errors.

The publishers have provided a preface of their own, an we have described certain disagreements with this prefac above. However, this doesn't exhaust the matter. We can not agree, either, with the fact that all the fundamental dif ferences with the propositions set forth in the book have been relegated to footnotes by the publishers. This treatment is useful in explaining a term, in providing a piece c reference information, etc., but in order to counterpose tc the author's standpoint our Marxist-Leninist position, foo notes are obviously completely inadequate, the more so as in the particular review of Mills' book which we are discussing, they are highly random in nature. The publishers should have provided in the preface, and, to be more precise, in its introductory section, a detailed presentation o the profound differences in principle in the understanding of the fundamental questions of statistics by bourgeois science and Marxist-Leninist science. They should have convincingly revealed the lack of validity and the unscientific nature of the concept underlying Mills' book, and should not have dodged this problem by saying that the Soviet reader would rush past the fundamental problems o theory in order to concentrate his attention on the matters of technique. We repeat that we are convinced of the opposite: the Soviet reader is primarily interested in the matters of principle, in the fundamental theoretical standpoint.

The publishers did not assist him to do this either in the numerous editor's notes nor in the preface. In place of generalized stereotype phrases about the inapplicability of bourgeois ideology in statistics, but the usefulness of the technical devices employed by Mills and other bourgeois statisticians, it would have been necessary to expose the reactionary essence of their ideology, and to criticize it specifically and convincingly. Then it would be clear that even the "technique" of the bourgeois economists and statisticians is itself not quite perfect but is intimately interrelated with their ideology.

(Voprosy Ekonomiki — Problems of Economics — No. 9, 1959)

G. Khromushin:

The Bourgeois Revisionist Myth of th "Democratization of Capital"

The directions followed by the apologists for modern monopoly capitalism are quite varied. An important place therein is occupied by the so-called theory of "democratization of capital." This theory is by no means a new one.

t was advanced by the revisionists at the very dawn of im-erialism. Its most complete presentation was that of E. Bernstein in his Herostratically notorious prerequisites for socialism, as V. I. Lenin called them. In its original form, he theory of the "democratization of capital" rested upon wo theses: 1) denial of the process of concentrations and centralization of capital and that socialization of production under capitalism sharply increases in the epoch of imperial-sm, as discovered by Marx; 2) denial of the absolute and elative impoverishment of the working class with the devel-pment of capitalism. On the one hand, chatter to the effect hat all segments of the people participate in capitalist roperty by the purchasing of shares and bonds, by savings, tc., was employed by revisionists to demonstrate that the ine of demarcation between wage labor and capital was al-egedly being erased. They proclaimed the establishment of ocial peace and went all out in attacks upon the Marxist-Leninist theory of the socialist revolution and the dictator-ship of the proletariat. On the other hand, they employed the heory of the "democratization of capital" to attempt to nask the economic essence of imperialism — the dominance f monopolies and the supreme power of the financial oli-garchy — and proclaimed the impossibility of the establish-nent of monopoly control over production and the market. n essence, Bernstein and his followers broke fundamentally vith the idea of socialist property.

Asserting that capitalist property loses its private char-cter in the course of its evolution, without the need for stablishment of a dictatorship by the proletariat, the op-ponents of the teachings of Marx and Lenin and of socialism strive to describe socialist public property in the lands of he socialist camp as the economic base for "bureaucracy" nd "totalitarianism."

The Soviet Union and the socialist camp as a whole have lemonstrated for all to see the flourishing of the economy nd culture attainable in a brief period by a people that has stablished a new society founded on socialist property. Therefore the bourgeois and reformist economists are triving to neutralize the example of the USSR and to present he monopolies as a new and more "human and effective tool" or the establishment of "capitalist social property," which s allegedly the highest achievement of the present day. In his connection, the bourgeois and reformist theoreticians ave re-examined one of the propositions of the former heory of "democratization of capital," which was negation f the process of socialization of production under capital-sm. Today, the process of concentration and centralization f capital has gone so far that it cannot be negated. True, here are some bourgeois economists, such as Stiegler, Nutter, Edelman, and others who distort statistical data and ontinue to deny the concentration of economic power and he rise in the monopolization of the economy. However, he majority of the bourgeois and reformist theoreticians re employing a different method of apology for capitalism, nd are striving to distort the real truth of the concentra-ion of capital under conditions of imperialism. They pro-laim the glories of the activities of the monopolies and riticize the viewpoint of those authors who deem the con-entration of capital to be a negative phenomenon. Thus, Professor Boulding of the University of Michigan states in o many words that "the old" theory is unsuited to cognition f the contemporary world. "The cause of antimonopolist noods" he writes, "is to be found in the doctrine of Adam mith, in the Anglo-Saxon tradition, in 'Jeffersonian democ-acy,' which favored extensive distribution of property and he mass of small property owners rather than a concen-ration of property." In his opinion, concentration facilitates ne appearance of various "social forms of property on the part of corporations, cooperatives, the state, the city, or the federal government."(1) A similar position is taken by Berle, who pretends to the role of the creator of "a true science of society." The essence of his reasoning resolves itself to the fact that American corporations have modified the institution of private property and have replaced individual property by social property. The dominance of monopolies in a number of branches of industry is described by Berle not as monopolistic control of production and the market but as the most important "revolutionary" reason for the modification of the earlier private capitalist property. "From this viewpoint," he concludes "it is justifiable to regard the American corporation...as a social institution of a revolutionary century."(2) This idea has been picked up by imperialist propaganda. For example, in his book America as a Civilization, Max Lerner speaks of "the revolution in property relations." "Private property," he asserts, "has remained private in the sense that it has not been converted into government property, but it has ceased to be the property of individuals and has become the property of corporations."(3) The concept of "the conversion of capital into the property of society" is today gaining broad dissemination in bourgeois political economy. Similar theses are being actively propagated by the reformists and revisionists of today. Thus, the British Laborites have openly declared that the problem of property has to be analyzed anew. They have stated that socialization has already achieved its purpose and on that basis they have rejected the policy of nationalization. The leader of the Labor Party, Harold Gaitskell, has proposed "new" paths for the achievement of "the socialist ideals" — improvement of tax policy and expansion of "social property" by government purchase of the stocks of individual enterprises. Such a policy obviously does not change the essence of property as the foundation of the exploitation of the working people. Taxes upon the incomes of private companies are transferred through a corresponding rise in prices to form a heavy burden upon the mass of the consumers or, in other words, upon the working people themselves. The high interest rate being paid to the former owners of the nationalized enterprises, or the participation of private capital in stock companies, in which a substantial portion of the stock is held by the government, continues to provide conditions for the extraction of enormous profits for private individuals and groups of businessmen.

The bourgeois economists and the revisionists confuse two separate concepts — the concentration of capital and the socialization of production which occurs under capitalism, and the destruction of capitalist property. However, the effort to make an equation between capitalist socialization of production and the creation of public property is completely without validity. The assertions of bourgeois, reformist and revisionist theoreticians to the effect that various forms of "capitalist social property" have been created under the conditions of today is pure and simple sophistry. The fact is that concentration and centralization of capital is a law of the capitalist method of production. As far back as the middle of the 19th century, in the epoch of pre-monopoly capitalism, Marx pointed out that the development of large-scale machine industry accompanied by a growth in the social division of labor, in specialization and cooperation among industries, causes the process of production to acquire a social character, which ties individual enterprises, branches of industry, and the workers occupied therein together in most intimate fashion and in the most various ways. However, property in the means of production remains private, and acquisition of the results of the labor of hired workers proceeds in private fashion.

Therefore, the socialization of production under capitalism cannot be equated with social changes of a revolutionary character. Labor and capital continue to interact in an ever more acute antagonistic contradiction, the development of which is accompanied by crises, declines in production, increase in unemployment, etc.

In the epoch of imperialism and the general crisis of capitalism, the process of socialization of production is sharply strengthened. Simultaneously, private capitalist property is concentrated in the hands of the financial oligarchy, and the basic contradiction of capitalism attains extreme acuteness. In characterizing the activities of the imperialist trusts, Lenin draws the conclusion that "what is before us is actually a socialization of production, and not merely an 'interweaving', that private economic and private property relations constitute a shell that no longer corresponds to its contents and one that must inevitably rot away if its elimination is artificially delayed, one that is capable of remaining in a state of decay for a comparatively long time (if the worst comes to the worst, if the cure of the opportunist abscess drags out), but which nevertheless will inevitably be eliminated."(4)

The experience of the last several decades has completely confirmed the accuracy of Lenin's conclusions. Therefore, the bourgeois and reformist economists have hastened to bring forth their interpretation of the essence of capitalist socialization. However, whereas at the beginning of the 20th century, revisionist theories differed at least outwardly from the frankly bourgeois apologetic theories, today they have virtually merged (Berle, Boulding, Bache, Colegrove, etc.). The bourgeois theoreticians and revisionists regard the institution of property from the viewpoint of its legal forms. However, the legal interpretation of property rules out any possibility of revealing its essence, because property itself is not a legal category, but is a specific relationship among human beings in social production. The production relationships of human beings, including their relationships in the field of distribution, develop on the basis of objective economic laws determining the nature of the given type of production. It is natural that in class society these relationships are reinforced by law. Any type of property remains capitalist property, serving as the economic foundation for capitalist exploitation, so long as capitalist relationships in production continue to dominate.

Contrariwise, socialist property has a truly social, popular character, as the socialist state represents the interests of the working people. The destruction of capitalist property and the creation of public socialist property is possible only after a socialist revolution and the establishment of the dictatorship of the proletariat. "Real liberation of the working class," V. I. Lenin wrote, "requires a social revolution, prepared by the entire development of capitalism, i.e., the elimination of private ownership of the means of production, the transfer of these means to social ownership and the replacement of the capitalist production of commodities by a socialist organization of the production of products for the benefit of society as a whole, to provide complete well-being and free all-round development of all of the members of society." Furthermore, V. I. Lenin emphasized "the dictatorship of the proletariat is the essential political condition for social revolution."(5) Moreover, the expropriation of the expropriators is merely the first step toward the creation of public socialist property and socialist relationships of production. After the realization of this most important act of the socialist revolution, the dictatorship of the proletariat faces an enormous and long-drawn-out job of economic organization. This second stage in socialist socialization is a most difficult and lengthy process of constructive work for the "establishment of a exceedingly complex and delicate network of new organizational relationships..." .(6)

The contemporary development of capitalism has completely justified the truth of the Marxist-Leninist conclusions to the effect that the socialization of production under capitalism is accompanied by a reduction in the numb of owners of capital and by a reinforcement of the power the financial oligarchy. Thus, in the USA, where there ar 4,300,000 firms, 640,000 corporations have assets totallin 762 billion dollars, of which 1,657 corporations with asse of 50 million dollars or more each hold 60% of the total assets of all. Nearly 30% of all the corporation assets ar held by 81 companies, whose assets total 241,500,000,000 dollars.(7) This pyramid is crowned by 8 financial groups with assets totalling 218 billion dollars representing 25% of the total assets. The duPonts, Mellons and Rockefeller whose properties are immense, occupy the dominant position in the ranks of the financial oligarchy of the United States of America.(8)

Holdings of the duPonts, Mellons and Rockefellers in 1937 and 1956 (minimum estimate of property represented by corporation assets; millions of dollars)

Family groups	December 31, 1937	April 30, 195
duPonts	574 million	4,660,000,00
Mellons	391 million	3,769,000,00
Rockefellers	397 million	3,515,000,00

If the assets controlled by these groups are added, the concentration of property is even more substantial. For example, the Rockefellers control assets to a grand total of 60 billion dollars, which is 17 times as great as their own property. It must be borne in mind that these estimat are minimum. They have been made by the progressive economist Victor Perlo on the basis of more or less comparable data and represent only the market value of the assets of these corporations.

The contemporary version of the theory of the "democratization of capital" reduces itself to the fact that the pro ess of socialization of production is represented as the creation of "social property," and that an ever wider dissemination of the right to property among the entire peopl is proceeding, with the result of which the incomes of various strata of society are becoming equalized. "Our corporative wealth" says the president of the New York Financial Exchange, G. Funston, "is the property of a new force in America: millions of people of medium income. These people are coming increasingly to recognize the advantages of owning their share of American business."(9)

The same thesis is actively propagated by the AFL-CIO in the United States, the British Laborites, French socialists, particularly Guy Mollet, and others. The theoretical source of the reformist and revisionist theses of the "broa distribution of the right of ownership among the entire people" will be found in openly bourgeois apologetic theories. For example, the theoretical baggage of this sam Guy Mollet is taken from the scribblings of the Austro-American "prophet" Schumpeter, whose book Capitalism, Socialism and Democracy has been raised high on the shiel of imperialist propaganda. The fundamental ideas of this book — "the evaporation" of private property, "the diffusio of the rights of property" are the objects of unrestrained enthusiasm by Guy Mollet. He constantly propagates these ideas and proposes that the "creation" of Schumpeter be made a handbook for every socialist.

The assertion that the "right of property in the wealth of
ciety" under capitalism is today being acquired by mil-
ons of working people is completely without foundation. It
es not differ in any fundamental way from the major con-
usion of the theory of "democratization of capital" in the
ersion exposed at the beginning of the 20th century by V. I.
enin. Criticizing the revisionists in this respect, V. I.
enin wrote "in essence, see — the Bernsteins, Herzes,
ernovs, Bulgakovs and their like say to us — this fact
eans that the small depositor in the savings bank becomes
e owner of railways, the owner of mortgages. Just see,
en such purely capitalist and colossally immense enter-
ises as railways and banks are becoming increasingly de-
entralized, fractionalized, and are being transferred to the
nds of small property owners through purchase by the
tter of stocks, bonds, mortgages, etc.; the number of own-
s of property — the number of the "haves" — is actually
creasing, and these narrow-minded Marxists continue to
erate with their obsolete theory of concentration and their
eory of impoverishment."(10)

In essence, the same viewpoint is held by the modern
urgeois and reformist economists, who assert that property
s become socialized and their right thereto has been dis-
minated among all. The actual significance of the purchase
stocks by working people was analyzed in detail by V. I.
enin: "An ever increasing number of working people and
nall producers are becoming participants in large enter-
ises via the saving banks. This fact is beyond question.
ut this fact proves not an increase in the number of prop-
ty owners but 1) an increase in the socialization of labor
the capitalist society and 2) an increase in the subordina-
on of small to large-scale production." V. I. Lenin taught
at despite the ownership of a few shares, the worker con-
ues as before to remain a proletarian compelled to sell
s labor power to the capitalists, or in other words, to go
to slavery to the owners of the means of production. Un-
r these conditions, enterprises become "ever less
rivate' but remain virtually entirely in the hands of private
rsons." Finally, we have to remember Lenin's teaching to
e effect that the small depositor finds himself in a new
pendence upon large-scale capital because in the case of
ailure he loses even his pitiful crumbs. "It is not the
eak-up of large scale capital," Lenin emphasized, "that is
e meaning of the abundance of these small depositors, but
inforcement of the might of large-scale capital which now
s at its disposal even the tiniest crumbs of the 'people's'
vings."(11)

Let us see how the "distribution of the right of property"
proceeding in reality in, for example, the contemporary
ited States.

Funston declares that the special feature of American free
terprise is the broad distribution of the ownership of
ocks: that 8,600,000 persons (or, 3 million families) are
rect owners of the corporations of the United States, and
at if one includes the persons owning their own businesses,
e number of people owning stocks rises to a total of 10
llion.(12) The American businessmen have hastened to
ow up a propagandist noise on this basis. The manage-
ent of the General Electric Corporation announced that
ne investment of savings in this company's stocks by a
rge number of people is typical of the United States, where
rtually every citizen is a capitalist."(13) Similar state-
ents have been made by the heads of Standard Oil of New
rsey, United States Steel Corporation, and others. How-
er, when things get down to specific data, even the most
rvent advocates of this thesis are compelled to recognize
t, among the millions of "owners of the corporate wealth
of the United States," that is, the broad mass of small stockholders, each individual holds merely a few shares of any significant total value. Thus, according to Funston, the 94 million shares of the American Telephone and Telegraph Company are held by 1,400,000 stockholders, of which about 200,000 are persons working for this company. More than half of these stockholders hold less than 100 shares each. The overwhelming majority of the stockholders hold only a few shares each and have no influence on the affairs of these monopolies.

A conference of Yale University, held November 16-17, 1956, was devoted to problems of "the distribution of the right to property in public capital." Such well known bourgeois economists as Kaplan, Nadler, the sociologist Colegrove and many others spoke on this matter, but they said nothing new. Professor Colegrove merely repeated that "today millions of workers hold stock in American corporations" that "they have a share in the incomes of these corporations." However, the data he adduced are in contradiction to such statements. Thus "United States Steel Corporation had assets of 2,400,000,000 dollars in 1955. There were 288,000 stockholders." "Of this total," Colegrove wrote, "173,057 people had not over 5 shares each."(14)

Unlike Colegrove, Kaplan and Nadler attempted to define two special features of the contemporary "democratization of property rights." The first comes down to the allegation that virtually every occupied person is a stockholder. "The number of stockholders today," Kaplan wrote, "is equal to or approximates the number of persons employed in many large American corporations. The effect of the graduated taxes on wealth and income is leading to a progressive diffusion of personal assets in American corporations."(15) Colegrove, Kaplan and Nadler adduce examples taken from the case histories of the various corporations. However, the total data do not confirm the thesis to the effect that there has been a substantial increase in the number of stockholders relative to the number of gainfully occupied in the United States.(16) (See table below).

Years	No. of stockholders	Gainfully occupied	Stockholders as % of gainfully occupied
	Millions		
1927	6.0	47.6	12.5
1952	6.5	61.3	10.6
1954	7.5	61.2	12.2
1956	8.6	65.0	13.4

It must be borne in mind that the overwhelming majority of the stockholders are members of management (44%) and office personnel (19.4%). Semi-skilled workers represent only 1.4% and unskilled workers only 0.2%.(17) The worker is often compelled to purchase stocks and to pay for them by deductions from his wages. Moreover, the condition is imposed that the workers do not participate in strikes and demonstrate complete loyalty to the company. Here, the sale of stocks to workers and office workers is a means of attack by capital upon the rights of the working people.

A second feature is seen in the "ever increasing number of stocks held by population groups with low and medium incomes." Thus, persons with incomes of more than $10,000 a year hold 55% of the stocks, those with incomes of between 5 and 10 thousand dollars hold 20%, those in the 4-5 thousand dollar bracket 7%, and those earning under $4,000 only 1.4%.(18)

Stocks held by working people were accurately described by Victor Perlo as a "symbolic share of ownership of capital." In fact, the average number of shares held by skilled and semiskilled workers in the USA does not exceed 20, and their total value is between 500 and 999 dollars. For office personnel this total is somewhat in excess of 1000 dollars. Consequently, the average value of shares held by any working person does not exceed a thousand dollars. The dividends obtained from these shares constitute about 40 dollars a year, which is about equal to 2 days' pay for workers in such industries as steel and automotive. This means that these "dividends" do not constitute a significant addition to wages and salaries. It is of interest to compare the 40-dollar dividend to the profit obtained by the capitalists from each worker in the USA. In 1955 this profit was 702 dollars after taxes, or in other words 17.6 times as large as the income derived by a "stockholder" having stocks totalling not more than 1000 dollars.(19)

The proponents of the theory of the "democratization of capital" assert that the distribution of the right to property in public capital eliminates the possibility of concentration of wealth in the hands of individuals. The facts completely refute this fantasy. Half a million American working class families hold stocks whose total value is about 0.2% of the total value of all the stocks in the country, and "97% of the workers do not hold even this symbolic 'share' in ownership in the means of production."(20)

According to the data of official statistics, the total value of the stocks in the hands of all American families living off wages was 750 million dollars in 1955, or 0.3% of the market value of all stocks in the USA.(21) The overwhelming bulk of the shares are concentrated in the hands of the financial oligarchy. The duPont family alone holds 10 times the value in shares owned by all the working people in America.

The estimate of the concentration of shares made by Butters, Thompson and Ballinger for 1949 is of interest. According to their estimate, 1% of all the "spending units" in the USA (with incomes of more than 15,000 dollars per year) had 65% of all the shares, whereas half of them (with incomes of over $25,000 a year) had 50% of all the shares and one-tenth (with incomes over $50,000 a year) held 35% of all the shares.(22)

In an article by Victor Perlo published in 1958, data are presented on the number of stocks of a series of companies in the hands of the 20 largest stockholders in 1937 and 1954 (in percentage).(23)

	1937	1954
Communications		
American Telephone & Telegraph Co.	3.8%	4.2%
Western Union	12.9	24.1
Railroads		
Pennsylvania	6.1	19.2
New York Central	23.7	42.6
Southern Pacific	15.0	15.3

These data testify that the concentration of stock ownership is increasing.

It is instructive to note that the theory of "the democratization of capital" is today most actively being propagandized specifically by the monopolist bourgeoisie and their learned salesmen. The reformists and revisionists are merely repeating the theses of modern bourgeois propaganda. "The Marxist prophecy," declares Max Lerner, "to the effect that the industrial proletariat becomes more and more impoverished under capitalism, has been transformed into its opposite in America," inasmuch as "unlimited s mobility makes it possible for each man to attain any dr whatever."(24)

The myth of "social mobility" and the transformation the workers into a middle class is actively propagated b reformism as well. The Laborite theoretician Cole repeats after Lerner that "only a rash individual would too assert that capitalism is condemned to death in the near future because of the contradictions inherent in it."(25)

Marxists have never asserted that capitalism will per the day after tomorrow or the year after next. Neither or Lenin ever set dates for the collapse of capitalism. is important is that the exceedingly profound antagonism tween labor and capital is not only not being modified bu on the contrary, being reinforced. The position of the pr letariat under capitalism and its relationship to the mea of production are not changing. This means that all the contradictions of the capitalist mode of production are c tinuing to develop, and that in the long run it will lead to revolutionary replacement by socialism under which ow ship of the means of production will for the first time be the property of the people as a whole.

FOOTNOTES

(1) K. Boulding, The Principles of Economic Policy, Ne York, 1958, pp. 31, 287.

(2) A. Berle, The Twentieth Century Capitalist Revoluti New York, 1954, p. 24.

(3) Max Lerner, America as a Civilization, Life and Th in the United States Today, New York, 1957, p. 303.

(4) V. I. Lenin, Collected Works, Vol. 22, p. 289 (Russi edition).

(5) V. I. Lenin, Collected Works, Vol. 6, pp. 12, 13.

(6) V. I. Lenin, Collected Works, Vol. 27, p. 213.

(7) Statistical Abstract of the United States, 1957, p. 48

(8) See Victor Perlo, The Empire of Finance Capital, Inoizdat, 1958, p. 61 (Russian Edition).

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(15) A. G. Kaplan, Big Enterprise in a Competitive Syst Washington, 1954, pp. 178-9.

(16) The American Economic Review, No. 3, June, 1958 The Handbook of Basic Economic Statistics, May 15, 195 pps. 12-13.

(17) The American Economic Review, No. 3, June, 1958 p. 337.

(18) Z. H. Kimmel, Share Ownership in the United State Washington, 1952, pp. 97, 128.

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(21) Federal Research Bulletin, June, 1955, Supplement XLI, p. 622, Table 19.

(22) J. K. Butters, Z. E. Thompson and Z. Z. Ballinger Effects of Taxation, Investments by Individual, Boston, 1 p. 440, p. 382. Table XVI, 3.

(23) The American Economic Review, June 1958, p. 341

(24) Max Lerner, America as a Civilization, Life and Thou the United States Today. New York, 1957, p. 232, 468.

(25) G. D. H. Cole, Studies in Class Structure, London, 195 p. 24.

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